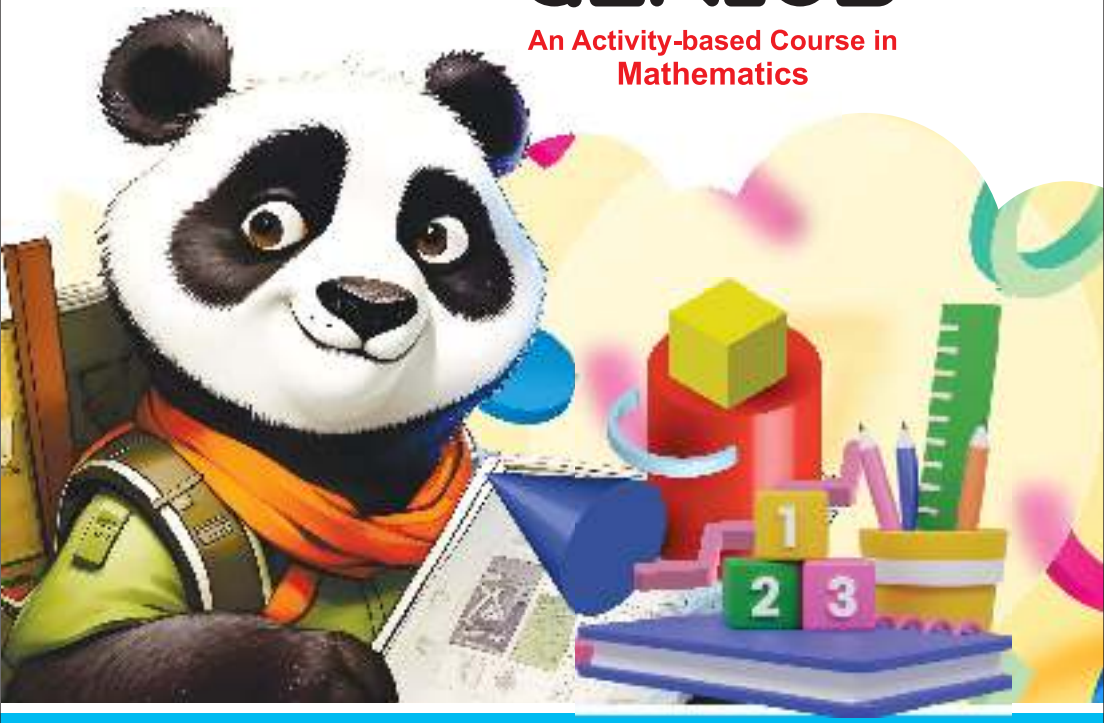
Teacher's Manual

Fiesta Learning
Big Ideas Simply Explained

Practice Makes Perfect !

MATHS GENIUS

An Activity-based Course in Mathematics



Designed by Expert Mathematicians

Sharma | Verma

4

1 Large Numbers (Upto Ten Lakhs)

Let Us Do-1A

1. 14,360 = Fourteen thousand three hundred sixty.

2. 43,507 = Forty three thousand five hundred seven.

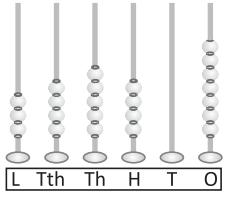
3. 4,16,034 = Four lakh sixteen thousand thirty four.

4. 5,14,005 = Five lakh fourteen thousand-five.

5. 1,05,025 = One lakh five thousand twenty-five.

6. 6,43,327 = Six lakh forty three thousand three hundred twenty-seven

7.



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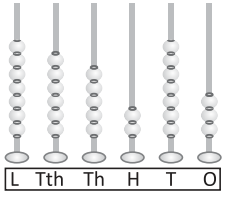

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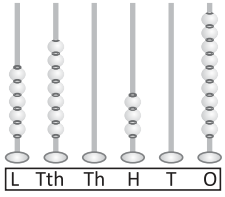
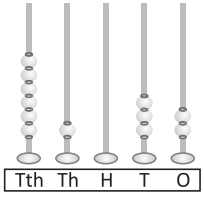


10. (a)



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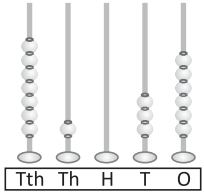

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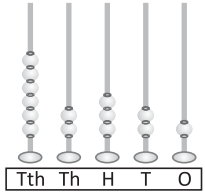

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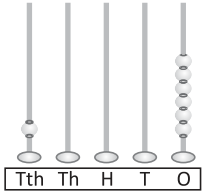

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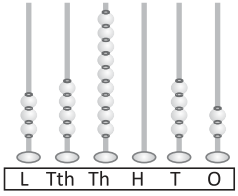

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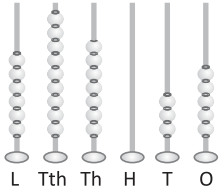

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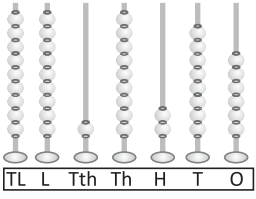

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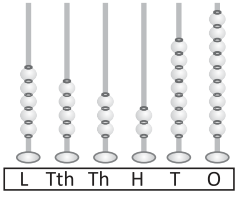

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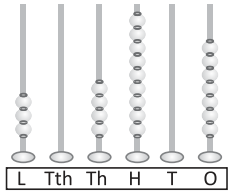

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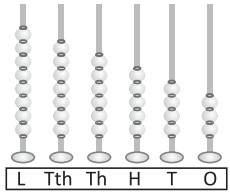


Let Us Do-1B

1. **Indian Place Value Chart**

	TL	L	T-Th	Th	H	T	O
(a)			9	3	5	7	6
(b)		5	3	0	2	3	7
(c)			9	8	6	4	5
(d)			3	9	4	3	7
(e)		8	5	2	3	4	7
(f)	7	7	9	4	0	0	8
(g)	4	5	8	1	9	7	7
(h)	2	7	7	2	1	9	4
(i)	8	4	0	0	0	0	3
(j)	7	2	0	0	1	0	9

(a) 93,576; (b) 5,30,237; (c) 98,645; (d) 39,437; (e) 8,52,347; (f) 77,94,008; (g) 45,81,977; (h) 27,72,194; (i) 84,00,003; (j) 72,00,109

2. (a) 25,465; (b) 17,101; (c) 7,64,879; (d) 87,905

3. (a) Thirty seven thousand five hundred and sixty-two: 3,00,00 + 7,000 + 60 + 2.

(b) Eighty thousand and three: 80,000 + 3.

(c) Three lakh sixteen thousand five hundred and ninety-four: 3,00,000 + 10,000 + 6000 + 500 + 90 + 4.

(d) Four lakh thirty five thousand eight hundred and forty-one: 4,00,000+30,000+5000+800+40+1.

(e) Seven lakh thirty nine thousand eight hundred and sixty-one: 7,00,000+30,000+9000+800+60+1.

(f) Fifty three thousand one hundred and six: 50,000 + 3000+100 + 6.

(g) Four lakh five thousand nine hundred: 4,00,000 + 5000 + 900.

(h) Nine lakh eighty nine thousand seven hundred and fifty-six: 9,00,000+80,000+9000+700+50+6.

(i) Eighty five thousand one hundred and twenty-nine: 80,000 + 5000 +100 + 20 + 9.

(j) Seventy seven thousand nine hundred and ninety-seven: 70,000 + 7000 + 900 + 90 + 7.

4. (a) 75,425; (b) 67,907; (c) 86,389; (d) 99,997

5. (a) 60,000; 5000; 700; 80; 9. (b) 70,000; 9000; 800; 60; 3.
(c) 2,00,000; 10,000; 3000; 400; 50; 6.
(d) 8,00,000; 90,000; 7000; 600; 50; 4.
(e) 2,00,000; 30,000; 5000; 600; 90; 1.

6. (a) 48,146; (b) 79,496; (c) 87,651; (d) 19,195; (e) 30,101.

7. (a) 13,099; (b) 28,914; (c) 29,098; (d) 1,18,999;
(e) 3,99,999.

8. (a) 30,001; 30,002; 30,003; 30,004; 30,005; 30,006; 30,007.
(b) 78,397; 78,398; 78,399; 78,400; 78,401; 78,402; 78,403; 78,404.
(c) 28,996; 28,997; 28,998; 28,999; 29,000; 29,001; 29,002; 29,003; 29,004.

9. (a) Smallest = 20,567; Greatest = 76,520.
(b) Smallest = 3,04,579; Greatest = 9,75,430.
(c) Smallest = 2,03,469; Greatest = 9,64,320.

10. 25,315; 25,345; 25,375; 25,405; 25,435; 25,465; 25,495.

11. 2,05,165; 2,06,165; 2,07,165; 2,08,165; 2,09,165; 2,10,165; 20,11,165.

12. (a) < (b) < (c) > (d) <.

13. (a) 2791 < 15,635 < 15,839 < 28,707 < 3,83,142.
(b) 4506<27,391<50,135 < 4,28,017<5,29,001.
(c) 50,695 < 85,786 < 1,73,525 < 3,71,425 < 7,37,545.

14. (a) 66,660 > 66,600 > 66,006 > 60,660 > 6,606;
(b) 99,999 > 29,901 > 26,306 > 25,603 > 21,001
(c) 55,555 > 55,505 > 55,055 > 50,055 > 5505

15. Number = 632,623,362,326,236,263: Ascending order:
236 < 263 < 326 < 362 < 623 < 632.

Addition

Let Us Do-2A

1.
$$\begin{array}{r} 47254 \\ +\ 32635 \\ \hline 79889 \end{array}$$

2.
$$\begin{array}{r} 56302 \\ +\ 42475 \\ \hline 98777 \end{array}$$

3.
$$\begin{array}{r} 273416 \\ +\ 422372 \\ \hline 695788 \end{array}$$

4.
$$\begin{array}{r} 352541 \\ +\ 434358 \\ \hline 786899 \end{array}$$

5.
$$\begin{array}{r} 356421 \\ +\ 523362 \\ \hline 879783 \end{array}$$

6.
$$\begin{array}{r} 425036 \\ +\ 364721 \\ \hline 789757 \end{array}$$

7.
$$\begin{array}{r} 715468 \\ +\ 173520 \\ \hline 888988 \end{array}$$

8.
$$\begin{array}{r} 633406 \\ +\ 365392 \\ \hline 998798 \end{array}$$

9.
$$\begin{array}{r} {\scriptstyle ①\,①①①} \\ 43782 \\ +\ 37499 \\ \hline 81281 \end{array}$$

10.
$$\begin{array}{r} {\scriptstyle ①\,①①①} \\ 56789 \\ +\ 48765 \\ \hline 105554 \end{array}$$

11.
$$\begin{array}{r} {\scriptstyle \quad ①\quad ①} \\ 67809 \\ +\ 90786 \\ \hline 158595 \end{array}$$

12.
$$\begin{array}{r} {\scriptstyle ①①①①①} \\ 47918 7 \\ +\ 57891 9 \\ \hline 1058106 \end{array}$$

13.
$$\begin{array}{r} {\scriptstyle ①\quad\ ①①} \\ 26907 5 \\ +\ 38069 5 \\ \hline 649770 \end{array}$$

14.
$$\begin{array}{r} {\scriptstyle ①①①①①} \\ 74998 8 \\ +\ 16789 9 \\ \hline 917887 \end{array}$$

15.
$$\begin{array}{r} {\scriptstyle \quad ①①①①} \\ 34516 7 \\ +\ 63899 9 \\ \hline 984166 \end{array}$$

16.
$$\begin{array}{r} {\scriptstyle ①\quad\ ①①①} \\ 59439 9 \\ +\ 38197 8 \\ \hline 976377 \end{array}$$

17.
$$\begin{array}{r} {\scriptstyle \quad ①\quad ①} \\ 43581 6 \\ +\ 51766 \\ \hline 487582 \end{array}$$

18.
$$\begin{array}{r} {\scriptstyle \quad\ \ ①①} \\ 42528 8 \\ +\ 32468 2 \\ \hline 749970 \end{array}$$

19.
$$\begin{array}{r} {\scriptstyle ②①②①①} \\ 38581 5 \\ 9748 7 \\ +\ 7289 5 \\ \hline 556197 \end{array}$$

20.
$$\begin{array}{r} {\scriptstyle ②③②②\ ②} \\ 60898 9 \\ 897 7 7 \\ 6666 6 \\ +\ 5550 \\ \hline 82098 2 \end{array}$$

21.

①	②	①	②	①	
	7	7	4	8	5
	2	1	8	2	8	3
+	4	5	5	4	5	8
	7	5	1	2	2	6

22.

①	①	③	②	②		
2	6	1	5	0	6	
3	1	5	6	5	5	
2	0	1	0	1	1	
	2	5	8	5	0	
+			9	9	9	
8	0	5	0	2	1	

23.

①	①	③	②	②	
2	3	5	8	1	6
2	3	8	9	8	4
4	3	2	8	9	8
		+	9	7	9
9	0	8	6	7	7

24.

		9	9	9	9
+	1	0	0	0	0
	1	9	9	9	9

25.

	①				
	9	9	9	9	9
	+	1	0	0	0
1	0	0	9	9	9

Let Us Do-2B

1. Cost of dining table = ₹ 45320
Cost of sofa set = + ₹ 50347
Total spent = ₹ 95667

2.

		①	①	①	①	①
No. of men	=	3	2	5	6	9	3
No. of women	=	4	7	2	8	1	7
No. of children	= +	2	9	6	0	8	4
Total population	=	1	0	9	4	5	9	4

3. No. of bags of sugar produced

		①	①	①	②	
First factory	=	4	8	5	3	7
Second factory	=	2	1	0	8	9
Third factory	=	+	9	8	0	5
		7	9	4	3	1

4.

			①			
Cost of one flat	=	₹	2	5	3	6	2	0	0
Cost of another flat	= +	₹			8	5	2	3	6	0
Total cost	=	₹	3	3	8	8	5	6	0

5. Bulb produced in one month = 586325
Bulb produced in second month = 169770
Bulb produced in third month = + 207605
Total production = 963700

6. Cost of a car = ₹ 650500
Cost of a van = + ₹ 375320
Total spend = ₹ 1025820

7. Anils's Income in 2016 = ₹ 267489
Anils's Income in 2017 = ₹ 267489 + ₹ 98798
$\Rightarrow$ 267489
+ 98798
= ₹ 366287
Total money earned by Anil in both the years = ₹ 267489 + ₹ 366287 = ₹ 633776

8. Milk sold first week = 35819 /
Milk sold second week = 41212 /
Milk sold third week = 40775 /
Milk sold fourth week = + 21095 /
Total milk sold in four weeks = 138901 /

9. No. of pass candidates = 95974
No. of failure candidates = + 47797
Total candidates = 143771

10. Spent on painting = ₹ 457300
Spent on repairs = ₹ 259470
Spent on furnishing = + ₹ 93050
Total spend = ₹ 809820

11. A number exceeds = ① ① ① ① ①
2 4 8 5 5 5
+ 9 7 6 4 5
3 4 6 2 0 0

12. Population of female = 148796

Population of male = 137989 + 148796

= 286785

① ① ① ①
1 3 7 9 8 9
+ 1 4 8 7 9 6
2 8 6 7 8 5

Total population = 148796 + 286785

= 435581

① ① ① ① ①
1 4 8 7 9 6
+ 2 8 6 7 8 5
4 3 5 5 8 1

13. ①①①①①

No. of valid votes = 348312

No. of invalid votes = 15609

No. of person who did not come to vote = 93887

Total vote registered = 457808

14. ①①①①

Difference of two numbers = 58766

Smaller number = + 78699

Then, greater number = 137465

①①①①①

Now, smaller number = 78699

and greater number = + 137465

Their sum = 216164

15. ① ② ①

Length of first rope = 5 2 3 8 1 m

Length of second rope = 3 2 8 3 2 m

Length of third rope = + 1 5 9 1 2 m

Total length of rope = 1 0 1 1 2 5 m

Subtraction

Let Us Do-3A

1.
$$\begin{array}{r} 8\,4\,5\,7\,2 \\ -\,4\,3\,0\,6\,1 \\ \hline 4\,1\,5\,1\,1 \end{array}$$

2.
$$\begin{array}{r} 7\,6\,4\,0\,5 \\ -\,5\,2\,3\,0\,4 \\ \hline 2\,4\,1\,0\,1 \end{array}$$

3.
$$\begin{array}{r} 4\,8\,6\,3\,5 \\ -\,2\,4\,3\,2\,0 \\ \hline 2\,4\,3\,1\,5 \end{array}$$

4.
$$\begin{array}{r} 6\,7\,9\,8\,0\,4 \\ -\,3\,5\,6\,5\,0\,3 \\ \hline 3\,2\,3\,3\,0\,1 \end{array}$$

5.
$$\begin{array}{r} 8\,7\,9\,8\,4\,2 \\ -\,7\,5\,6\,7\,0\,1 \\ \hline 1\,2\,3\,1\,4\,1 \end{array}$$

6.
$$\begin{array}{r} 9\,6\,8\,6\,3\,8 \\ -\,6\,5\,7\,4\,2\,3 \\ \hline 3\,1\,1\,2\,1\,5 \end{array}$$

7.
$$\begin{array}{r} {\scriptstyle 13\ 14} \\ 5\ \cancel{3}\ \cancel{4}\ 18 \\ 7\,\cancel{6}\,4\,\cancel{5}\,\cancel{8} \\ -\,6\,2\,6\,7\,9 \\ \hline 1\,3\,7\,7\,9 \end{array}$$

8.
$$\begin{array}{r} {\scriptstyle 6\ 18\ 6\ 18} \\ 8\,\cancel{7}\,\cancel{8}\,\cancel{7}\,\cancel{8} \\ -\,6\,5\,9\,5\,9 \\ \hline 2\,1\,9\,1\,9 \end{array}$$

9.
$$\begin{array}{r} {\scriptstyle 15\ 11} \\ {\scriptstyle 7\ \ 5\ \ 1\ 11} \\ 4\,\cancel{8}\,\cancel{6}\,\cancel{2}\,\cancel{1} \\ +\,2\,4\,8\,7\,5 \\ \hline 2\,3\,7\,4\,6 \end{array}$$

10.
$$\begin{array}{r} {\scriptstyle 8\ 13\ 6\ 16} \\ 5\,\cancel{9}\,\cancel{3}\,\cancel{7}\,\cancel{6} \\ -\,2\,1\,9\,3\,9 \\ \hline 3\,7\,4\,3\,7 \end{array}$$

11.
$$\begin{array}{r} {\scriptstyle 11} \\ {\scriptstyle 7\ 1\ 11} \\ 9\,\cancel{8}\,\cancel{2}\,\cancel{1}\,5 \\ -\,7\,6\,9\,3\,5 \\ \hline 2\,1\,2\,8\,0 \end{array}$$

12.
$$\begin{array}{r} {\scriptstyle 17\ 11} \\ {\scriptstyle 8\ \ 7\ \ 1\ 11} \\ \cancel{9}\,\cancel{8}\,\cancel{2}\,\cancel{1}\,5 \\ -\,8\,9\,3\,9\,5 \\ \hline 0\,8\,8\,2\,0 \end{array}$$

13. For this we have to subtract 16877 from 20147 $\Rightarrow$

$$\begin{array}{r} {\scriptstyle 10} \\ {\scriptstyle 1\ 9\ \ 0\ 14} \\ \cancel{2}\,\cancel{0}\,\cancel{1}\,\cancel{4}\,7 \\ -\,1\,6\,8\,7\,7 \\ \hline 0\,3\,2\,7\,0 \end{array}$$

14. For this we have to subtract 3675 from 32050

$$\begin{array}{r} {\scriptstyle 11\ \ 14} \\ {\scriptstyle 2\ \cancel{1}\ \ 9\ \ \cancel{4}\ 10} \\ \cancel{3}\,\cancel{2}\,0\,\cancel{5}\,\cancel{0} \\ -\,3\,6\,7\,5 \\ \hline 2\,8\,3\,7\,5 \end{array}$$

15. Sum of two numbers $= 90312$
One of the number $= 36825$
Other number $= 90312 - 36825$
$= 53487$ $\Rightarrow$

$$\begin{array}{r} {\scriptstyle 12\ \ 10} \\ {\scriptstyle 8\ 9\ \ \cancel{2}\ \ \cancel{0}\ 12} \\ \cancel{9}\,\cancel{0}\,\cancel{3}\,\cancel{1}\,\cancel{2} \\ -\,3\,6\,8\,2\,5 \\ \hline 5\,3\,4\,8\,7 \end{array}$$

16. For this we have to subtract 27385 from 56029

$$\begin{array}{r} {\scriptstyle 4\ 15\ 9\ 12} \\ \cancel{5}\ \cancel{6}\ \cancel{0}\ \cancel{2}\ 9 \\ -\ 2\ 7\ 3\ 8\ 5 \\ \hline 2\ 8\ 6\ 4\ 4 \end{array}$$

17. For this we have to subtract 1426 from 38017

$$\begin{array}{r} {\scriptstyle 7\ 9\ 11} \\ 3\ \cancel{8}\ \cancel{0}\ \cancel{1}\ 7 \\ -\ 1\ 4\ 2\ 6 \\ \hline 3\ 6\ 5\ 9\ 1 \end{array}$$

18. Which is greater and by how much?

(a)

$$\begin{array}{r} {\scriptstyle 7\ 10\ 15} \\ 7\ \cancel{8}\ \cancel{1}\ \cancel{5}\ 3 \\ -\ 7\ 2\ 8\ 6\ 3 \\ \hline 0\ 5\ 2\ 9\ 0 \end{array}$$

78,153 is greater than 72,863 by 5290.

(b)

$$\begin{array}{r} {\scriptstyle 17\ 11\ 10} \\ {\scriptstyle 1}\ \cancel{7}\ \cancel{1}\ \cancel{0}\ {\scriptstyle 15} \\ \cancel{2}\ \cancel{8}\ \cancel{2}\ \cancel{1}\ \cancel{5} \\ -\ 1\ 8\ 9\ 7\ 7 \\ \hline 0\ 9\ 2\ 3\ 8 \end{array}$$

28,215 is greater than 18977 by 9238

(c)

$$\begin{array}{r} {\scriptstyle 8\ 14} \\ \cancel{9}\ \cancel{4}\ 9\ 9\ 9 \\ -\ 8\ 5\ 8\ 8\ 5 \\ \hline 0\ 9\ 1\ 1\ 4 \end{array}$$

94,999 is greater than 85,885 by 9114

(d)

$$\begin{array}{r} {\scriptstyle 3\ 11\ 5\ 10\ 9\ 12} \\ \cancel{4}\ \cancel{1}\ \cancel{6}\ \cancel{1}\ \cancel{0}\ \cancel{2} \\ -\ 3\ 2\ 2\ 2\ 1\ 8 \\ \hline 0\ 9\ 3\ 8\ 8\ 4 \end{array}$$

4,16,102 is greater than 3,22,218 by 93884

19. Sum of 25,216 and 45,478 $=$

$$\begin{array}{r} 2\ 5\ 2\ 1\ 6 \\ +\ 4\ 5\ 4\ 7\ 8 \\ \hline 7\ 0\ 6\ 9\ 4 \end{array}$$

Sum of 46,748 and 19,575 $=$

$$\begin{array}{r} 4\ 6\ 7\ 4\ 8 \\ +\ 1\ 9\ 5\ 7\ 5 \\ \hline 6\ 6\ 3\ 2\ 3 \end{array}$$

Difference of both the sums $=$

$$\begin{array}{r} 7\ 0\ 6\ 9\ 4 \\ -\ 6\ 6\ 3\ 2\ 3 \\ \hline 0\ 4\ 3\ 7\ 1 \end{array}$$

Hence, sum of 25,216 and 45,478 is 4371 greater than the sum of 46748 and 19575.

20.
$$\begin{array}{r} {\scriptstyle 12}\\ {\scriptstyle 3\ \ 2\ 11}\\ 4\ 3\ 1\ 2\ 5\\ -\ 3\ 9\ 6\ 1\ 5\\ \hline 0\ 3\ 5\ 1\ 0 \end{array}$$

21.
$$\begin{array}{r} {\scriptstyle 10}\\ {\scriptstyle 1\ 13\ 8\ 0\ 15}\\ 2\ 3\ 9\ 1\ 5\\ -\ 1\ 9\ 8\ 9\ 8\\ \hline 0\ 4\ 0\ 1\ 7 \end{array}$$

22.
$$\begin{array}{r} {\scriptstyle 4\ 10\ 10\ 11}\\ 5\ 5\ 1\ 1\ 1\\ -\ 4\ 9\ 9\ 9\\ \hline 5\ 0\ 1\ 1\ 2 \end{array}$$

23.
$$\begin{array}{r} {\scriptstyle 14\ 13\ 13}\\ {\scriptstyle 1\ 4\ 3\ 3\ 14}\\ 2\ 5\ 4\ 4\ 4\\ -\ 1\ 8\ 8\ 8\ 8\\ \hline 0\ 6\ 5\ 5\ 6 \end{array}$$

24.
$$\begin{array}{r} {\scriptstyle 17\ 10}\\ {\scriptstyle 11\ 3\ 7\ 0\ 15}\\ 1\ 1\ 4\ 8\ 1\ 5\\ -\ 9\ 0\ 9\ 8\ 9\\ \hline 0\ 2\ 3\ 8\ 2\ 6 \end{array}$$

25.
$$\begin{array}{r} {\scriptstyle 17}\\ {\scriptstyle 5\ 7\ 9\ 9\ 11}\\ 3\ 6\ 8\ 0\ 0\ 1\\ -\ 2\ 4\ 9\ 9\ 9\ 9\\ \hline 1\ 1\ 8\ 0\ 0\ 2 \end{array}$$

26. For this we have to subtract
57823 from 111101

$$\begin{array}{r} 1\ 1\ 1\ 1\ 0\ 1\\ -\ 5\ 7\ 8\ 2\ 3\\ \hline 0\ 5\ 3\ 2\ 7\ 8 \end{array}$$

27. For this we have to subtract
38976 from 100000

$$\begin{array}{r} 1\ 0\ 0\ 0\ 0\ 0\\ -\ 3\ 8\ 9\ 7\ 6\\ \hline 6\ 1\ 0\ 2\ 4 \end{array}$$

Let Us Do-3B

1. Anil earned = ₹ 36127
He spent − ₹ 29899
He save = ₹ 06228

2. Population of a town in 2016 = 86549
Population in 2017 = 96,000
Increase in population = 96000 − 86549 ⇒
$$\begin{array}{r} 9\ 6\ 0\ 0\ 0\\ -\ 8\ 6\ 5\ 4\ 9\\ \hline 0\ 9\ 4\ 5\ 1 \end{array}$$
= 9451

3. Difference between two numbers = 33,689
If larger number = 80302
Then, smaller number = 80302 − 33689 ⇒
$$\begin{array}{r} 8\ 0\ 3\ 0\ 2\\ -\ 3\ 3\ 6\ 8\ 9\\ \hline 4\ 6\ 6\ 1\ 3 \end{array}$$
= 46613

4. Difference = 26795
If minuend = 31233
Then subtrahend = 31233 − 26795 ⇒
$$\begin{array}{r} 3\ 1\ 2\ 3\ 3\\ -\ 2\ 6\ 7\ 9\ 5\\ \hline 0\ 4\ 4\ 3\ 8 \end{array}$$
= 4438

5. Total students $= 13250$
No. of boys $= 11867$
No. of girls $= 13250 - 11867$
$= 1383$

$$\begin{array}{r} 13250 \\ -\ 11867 \\ \hline 01383 \end{array}$$

6. Total spent on a gober gas plant by a farmer $= ₹\ 24025$
He received a loan from the bank $= ₹\ 22599$
Farmer spend money from his pocket
$= ₹\ (24025 - 22599) \Rightarrow$
$= ₹\ 1426$

$$\begin{array}{r} 24025 \\ -\ 22599 \\ \hline 01426 \end{array}$$

7. Total amount in the Neha's bank account $= ₹\ 96312$
She withdraw $= ₹\ 24999$
Balance in her account $= ₹\ (96312 - 24999) \Rightarrow$
$= ₹\ 71{,}313$

$$\begin{array}{r} 96312 \\ -\ 24999 \\ \hline 71313 \end{array}$$

8. Total bags of wheat in a godown $= 35000$ bags
No. of bags taken out $= 33529$
Bags remain in the godown
$= 35000 - 33529 \Rightarrow$
$= 1471$

$$\begin{array}{r} 35000 \\ -\ 33529 \\ \hline 1471 \end{array}$$

9. Speedometer reading at the beginning of a journey
$= 57314$ km
Speedometer reading at the end of the journey $= 68100$
No. of kilometres can travel
$= 68100 - 57314 \Rightarrow$
$= 10{,}786$

$$\begin{array}{r} 68100 \\ -\ 57314 \\ \hline 10786 \end{array}$$

10. Total sheets of paper $= 38925$
Sheets used to make exercise books $= 16876$
No. of sheets of paper left
$= 38925 - 16876 \Rightarrow$
$= 22{,}049$

$$\begin{array}{r} 38925 \\ -\ 16876 \\ \hline 22049 \end{array}$$

11. Total cost of a sewing machine and a cycle $= ₹\ 66760$
If cost of sewing machine $= ₹\ 32975$
Then cost of cycle
$= ₹\ (66760 - 32975) \Rightarrow$
$= ₹\ 33{,}785$

$$\begin{array}{r} 66760 \\ -\ 32975 \\ \hline 33785 \end{array}$$

12. Total money in Naresh's account
$= ₹\ 88515$
He withdraw $= ₹\ 43986$
Money left $= ₹\ (88515 - 43986) \Rightarrow$
$= ₹\ 44529$

$$\begin{array}{r} 88515 \\ -\ 43986 \\ \hline 44529 \end{array}$$

13. Total production of socks on Monday $= 96005$ pairs
Total production of socks on Tuesday $= 55816$ pairs
On Monday production was more by
$= 96005 - 55816$
$= 40189$ pairs

$$\Rightarrow \begin{array}{r} 96005 \\ -\ 55816 \\ \hline 40189 \end{array}$$

14. Sum of two numbers $= 49864$
If one of them $= 4976$
Then, other number $= 49864 - 4976 \Rightarrow$
$= 44,888$

$$\begin{array}{r} 49864 \\ -\ 4976 \\ \hline 44888 \end{array}$$

15. Total appeared students $= 19,320$
No. of pass students $= 6548$
No. of failed students $= 19320 - 6548 \Rightarrow$
$= 12772$

$$\begin{array}{r} 19320 \\ -\ 6548 \\ \hline 12772 \end{array}$$

Let Us Do-3C

1. Total toys in a store $= 36039$
Total sold on both days $= 21708 + 11359 \Rightarrow$
$= 33067$

$$\begin{array}{r} 21708 \\ +\ 11359 \\ \hline 33067 \end{array}$$

No. of toys left in the store
$= 36039 - 33067 \Rightarrow$
$= 2972$

$$\begin{array}{r} 36039 \\ -\ 33067 \\ \hline 02972 \end{array}$$

2. Total money with Rakesh $= ₹\ 98530$
Total spent by him on scooter, TV set and transportation
$= ₹\ (21235 + 48470 + 1535)$
$= ₹\ 71240$
The balance amount left
$= 98530 - 71240$
$= 27290$

$$\begin{array}{r} 21235 \\ 48470 \\ +\ 1535 \\ \hline 71240 \end{array} \qquad \begin{array}{r} 98530 \\ -\ 71240 \\ \hline 27290 \end{array}$$

3. Total persons visited the Appu Ghar = 48016

Persons visited the Appu Ghar on Monday and Tuesday = 13548 + 22979 ⇒ = 36527

$$\begin{array}{r} 13548 \\ +\,22979 \\ \hline 36527 \end{array}$$

Persons visited on Wednesday = 48016 − 36527 ⇒ = 11489 persons

$$\begin{array}{r} 48016 \\ -\,36527 \\ \hline 11489 \end{array}$$

4. Total length of wire = 83025 m

Cut off length of two pieces wire = (38239 + 23728) m ⇒ = 61967 m

$$\begin{array}{r} 38239 \\ +\,23728 \\ \hline 61967 \end{array}$$

Remaining length of wire = (83025 − 61967) m ⇒ = 21058 m

$$\begin{array}{r} 83025 \\ -\,61967 \\ \hline 21058 \end{array}$$

5. Sumit had to travel = 26325 km

He travelled by bus = 13678 km

Distance travelled by car = (26325 − 13678) km ⇒ = 12647 km

$$\begin{array}{r} 26325 \\ -\,13678 \\ \hline 12647 \end{array}$$

6. Total population of a town = 48215

No. of men and women = 13438 + 22859 ⇒ = 36297

$$\begin{array}{r} 13438 \\ +\,22859 \\ \hline 36297 \end{array}$$

No. of children = 48215 − 36297 ⇒ = 11918

$$\begin{array}{r} 48215 \\ -\,36297 \\ \hline 11918 \end{array}$$

7. Total population of a town = 82010

No. of men and women = 43413 + 25929 ⇒ = 69342

$$\begin{array}{r} 43413 \\ +\,25929 \\ \hline 69342 \end{array}$$

No. of children = 82010 − 69342 ⇒ = 12668

$$\begin{array}{r} 82010 \\ -\,69342 \\ \hline 12668 \end{array}$$

8. The sum of three numbers = 88976

The sum of two numbers among them = 36912 + 26002 ⇒ = 62914

$$\begin{array}{r} 36912 \\ +\,26002 \\ \hline 62914 \end{array}$$

Third number $= 88976 - 62914 \Rightarrow$ $= 26062$

$$\begin{array}{r} 88976 \\ -\,62914 \\ \hline 26062 \end{array}$$

9. Smallest 5- digit number $= 10000$
Largest 5-digit number $= 99999$
Their sum $= 10000 + 99999 = 109999 \Rightarrow$
Now, we have to subtract 109999 from 1,15,216 $\Rightarrow$

$$\begin{array}{r} 10000 \\ +\,99999 \\ \hline 109999 \end{array} \qquad \begin{array}{r} 115216 \\ -\,109999 \\ \hline 5217 \end{array}$$

10. Total production of milk $= 70000\ l$
Total supply of milk to both the depot $= (32502 + 22697)\ l \Rightarrow$ $= 55199\ l$
milk left with diary $= (70000 - 55199)\ l \Rightarrow$ $= 14801\ l$

$$\begin{array}{r} 32502 \\ +\,22697 \\ \hline 55199 \end{array} \qquad \begin{array}{r} 70000 \\ -\,55199 \\ \hline 14801 \end{array}$$

11. Total money with kapil $= ₹\ 49612$
Vipul has money $= ₹\ (49612 - 26900) \Rightarrow$ $= ₹\ 22712$

$$\begin{array}{r} 49612 \\ -\,26900 \\ \hline 22712 \end{array}$$

12. Total money with Ram $= ₹\ 5{,}00{,}000$
His total expenditure on car, house and for charity $= ₹\ (175000 + 228000 + 50000)$ $= 453000$
He deposite Money in the bank $= ₹\ (500000 - 453000)$ $= ₹\ 47000$

$$\begin{array}{r} 175000 \\ 228000 \\ +\,50000 \\ \hline 453000 \end{array} \qquad \begin{array}{r} 500000 \\ -\,453000 \\ \hline 47000 \end{array}$$

13. $26595 - 19112 + 3045 - 2915 = 26595 + 3045 - 19112 - 2915$
$= 29640 - 22027 =$ **7613**

14. $47817 + 3910 - 36815 - 6975 = 51727 - 43790 =$ **7937**

15. $80950 - 10000 - 9999 + 99999 = 80950 + 99999 - 10000 - 9999$
$= 180949 - 19999 =$ **160950**

16. $8706 + 236148 + 435730 - 2756 - 200196 = 680584 - 202952$
$=$ **477632**

17. $96795 + 495977 + 388989 - 284888 - 396736$
$= 981761 - 681624 =$ **300137**

18. $328295 + 8806 + 430985 - 495555 - 85888 = 768086 - 581443$
$= \mathbf{186643}$

Multiplication

Let Us Do-4A

1. $615 \times 200 = (615 \times 2)$ hundreds $= 1230$ hundreds $= 123000$
2. $679 \times 300 = (679 \times 3)$ hundreds $= 2037$ hundreds $= 203700$
3. $969 \times 400 = (969 \times 4)$ hundreds $= 3876$ hundreds $= 387600$
4. $867 \times 600 = (867 \times 6)$ hundreds $= 5202$ hundreds $= 520200$
5. $297 \times 900 = (297 \times 9)$ hundreds $= 2673$ hundreds $= 267300$
6. $867 \times 700 = (867 \times 7)$ hundreds $= 6069$ hundreds $= 606900$
7. $1456 \times 1000 = (1456 \times 1)$ thousand $= 1456000$
8. $396 \times 2000 = (396 \times 2)$ thousands $= 792$ thousands $= 792000$
9. $986 \times 4000 = (986 \times 4)$ thousands $= 3944$ thousands $= 3944000$
10. $969 \times 5000 = (969 \times 5)$ thousands $= 4845$ thousands $= 4845000$
11. $297 \times 7000 = (297 \times 7)$ thousands $= 2079$ thousands $= 2079000$
12. $189 \times 8000 = (189 \times 8)$ thousands $= 1512$ thousands $= 1512000$
13. $412 \times 8000 = (412 \times 8)$ thousands $= 3296$ thousands $= 3296000$
14. $371 \times 400 = (371 \times 4)$ hundreds $= 1484$ hundreds $= 148400$
15. $337 \times 900 = (337 \times 9)$ hundreds $= 3033$ hundreds $= 303300$
16. $187 \times 9000 = (187 \times 9)$ thousands $= 1683$ thousands $= 1683000$

Let Us Do-4B

1.
$$\begin{array}{r} 921 \\ \times\ 11 \\ \hline 921 \\ +\ 9210 \\ \hline 10131 \end{array}$$

2.
$$\begin{array}{r} 276 \\ \times\ 46 \\ \hline 1656 \\ +\ 11040 \\ \hline 12696 \end{array}$$

3.
$$\begin{array}{r} 182 \\ \times\ 64 \\ \hline 728 \\ +\ 10920 \\ \hline 11648 \end{array}$$

4.
$$\begin{array}{r} 374 \\ \times\ 28 \\ \hline 2992 \\ +\ 7480 \\ \hline 10472 \end{array}$$

5.
$$\begin{array}{r} 719 \\ \times\ 19 \\ \hline 6471 \\ +\ 7190 \\ \hline 13661 \end{array}$$

6.
$$\begin{array}{r} 650 \\ \times\ 29 \\ \hline 5850 \\ +\ 13000 \\ \hline 18850 \end{array}$$

7.

$$\begin{array}{r} 936 \\ \times\ 60 \\ \hline 0000 \\ +\ 56160 \\ \hline 56160 \end{array}$$

8.

$$\begin{array}{r} 248 \\ \times\ 36 \\ \hline 1488 \\ +\ 7440 \\ \hline 8928 \end{array}$$

9.

$$\begin{array}{r} 684 \\ \times\ 137 \\ \hline 4788 \\ 20520 \\ +\ 68400 \\ \hline 93708 \end{array}$$

10.

$$\begin{array}{r} 343 \\ \times\ 271 \\ \hline 343 \\ 24010 \\ +\ 68600 \\ \hline 92953 \end{array}$$

11.

$$\begin{array}{r} 607 \\ \times\ 143 \\ \hline 1821 \\ 24280 \\ +\ 60700 \\ \hline 86801 \end{array}$$

12.

$$\begin{array}{r} 408 \\ \times\ 203 \\ \hline 1224 \\ 0000 \\ +\ 81600 \\ \hline 82824 \end{array}$$

13.

$$\begin{array}{r} 243 \\ \times\ 125 \\ \hline 1215 \\ 4860 \\ +\ 24300 \\ \hline 30375 \end{array}$$

14.

$$\begin{array}{r} 376 \\ \times\ 147 \\ \hline 2632 \\ 15040 \\ +\ 37600 \\ \hline 55272 \end{array}$$

15.

$$\begin{array}{r} 1456 \\ \times\ 195 \\ \hline 7280 \\ 131040 \\ +\ 145600 \\ \hline 283920 \end{array}$$

16.

$$\begin{array}{r} 645 \\ \times\ 167 \\ \hline 4515 \\ 38700 \\ +\ 64500 \\ \hline 107715 \end{array}$$

17.

$$\begin{array}{r} 819 \\ \times\ 258 \\ \hline 6552 \\ 40950 \\ +\ 163800 \\ \hline 211302 \end{array}$$

18.

$$\begin{array}{r} 936 \\ \times\ 523 \\ \hline 2808 \\ 18720 \\ +\ 468000 \\ \hline 489528 \end{array}$$

19.

$$\begin{array}{r} 284 \\ \times\ 209 \\ \hline 2556 \\ 00000 \\ +\ 56800 \\ \hline 59356 \end{array}$$

20.

$$\begin{array}{r} 208 \\ \times\ 403 \\ \hline 624 \\ 00000 \\ +\ 83200 \\ \hline 83824 \end{array}$$

21.

	1	2	5	3
		×	4	2
	2	5	0	6
+	5	0	1	2	0
	5	2	6	2	6

22.

	3	1	6	5
		×	2	6
1	8	9	9	0
+	6	3	3	0	0
	8	2	2	9	0

23.

	4	2	6	1
		×	2	8
	3	4	0	8	8
+	8	5	2	2	0
1	1	9	3	0	8

24.

		3	6	1	6
			×	3	2
		7	2	3	2
+	1	0	8	4	8	0
	1	1	5	7	1	2

25.

		7	3	9	2
			×	9	3
		2	2	1	7	6
+	6	6	5	2	8	0
	6	8	7	4	5	6

26.

		3	6	1	2
			×	6	5
		1	8	0	6	0
+	2	1	6	7	2	0
	2	3	4	7	8	0

27.

		5	9	3	7
			×	3	6
		3	5	6	2	2
+	1	7	8	1	1	0
	2	1	3	7	3	2

28.

		5	4	8	1
			×	3	1
		5	4	8	1
+	1	6	4	4	3	0
	1	6	9	9	1	1

29.

		6	1	2	5
			×	3	6
		3	6	7	5	0
+	1	8	3	7	5	0
	2	2	0	5	0	0

30.

		4	2	2	5
			×	3	6
		2	5	3	5	0
+	1	2	6	7	5	0
	1	5	2	1	0	0

Let Us Do-4C

1. Apples in a box = 435
Apples in 95 boxes
= 435 × 95
= 41325

	4	3	5
	×	9	5
	2	1	7	5
+	3	9	1	5	0
	4	1	3	2	5

2. Pens in a box = 275
Pens in 69 boxes
= 275 × 69
= 18975

	2	7	5
	×	6	9
	2	4	7	5
+	1	6	5	0	0
	1	8	9	7	5

3. Bulbs can be packed in one carton = 561
Bulbs can be packed in 56 cartons = 561 × 56
= 31416

	5	6	1
	×	5	6
	3	3	6	6
+	2	8	0	5	0
	3	1	4	1	6

4. Almirahs in an office $= 322$
Each almirah contains $= 87$ files
Number of total files $= 322 \times 87$
$= 28014$ files

$$\begin{array}{r} 322 \\ \times\ 87 \\ \hline 2254 \\ +25760 \\ \hline 28014 \end{array}$$

5. Raju delivers newspaper $= 95$
In one year $= 95 \times 365$
$= 34675$ newspaper

$$\begin{array}{r} 365 \\ \times\ 95 \\ \hline 1825 \\ +32850 \\ \hline 34675 \end{array}$$

6. Schools in a city $= 88$
Students in each school $= 395$
Total students $= 34760$

$$\begin{array}{r} 395 \\ \times\ 88 \\ \hline 3160 \\ +31600 \\ \hline 34760 \end{array}$$

7. Bags of sugar in a truck $= 263$
Bags in 197 trucks $= 263 \times 197$
$= 51811$ bags

$$\begin{array}{r} 263 \\ \times\ 197 \\ \hline 1841 \\ 23670 \\ +26300 \\ \hline 51811 \end{array}$$

8. Cost of a refrigrator $= ₹\ 6563$
Cost of 56 refrigrators $= 6563 \times 56$
$= ₹\ 367528$

$$\begin{array}{r} 6563 \\ \times\ 56 \\ \hline 39378 \\ +32815\,0 \\ \hline 367528 \end{array}$$

9. Cost of a chair $= ₹\ 967$
Cost of 326 chairs $= 967 \times 326$
$= ₹\ 315242$

$$\begin{array}{r} 967 \\ \times\ 326 \\ \hline 5802 \\ 19340 \\ +29010\,0 \\ \hline 315242 \end{array}$$

10. Typist can type per minture $= 87$ words
Type in two hours $= 87 \times 120$
$= 10440$ words

$$\begin{array}{r} 120 \\ \times\ 87 \\ \hline 840 \\ +9600 \\ \hline 10440 \end{array}$$

11. Students in a school $= 649$
Each student contribute fund $= ₹\ 501$

Total money $= 649 \times 501$
$= 325149$

$$\begin{array}{r} 649 \\ \times\ 501 \\ \hline 649 \\ 0000 \\ +\ 324500 \\ \hline 325149 \end{array}$$

12. Total hours in january $= 24 \times 31$
$= 744$ hours

$$\begin{array}{r} 24 \\ \times\ 31 \\ \hline 24 \\ +\ 720 \\ \hline 744 \end{array}$$

13. Company produces bulbs per day
$= 315$
Bulbs produce in a year $= 315 \times 366$
$= 115290$ bulbs

$$\begin{array}{r} 315 \\ \times\ 366 \\ \hline 1890 \\ 18900 \\ +\ 94500 \\ \hline 115290 \end{array}$$

14. A cycle costs $= ₹\ 3965$
Cost of 83 cycles $= 3965 \times 83$
$= ₹\ 329095$

$$\begin{array}{r} 3965 \\ \times\ 83 \\ \hline 11895 \\ +\ 317200 \\ \hline 329095 \end{array}$$

15. Weight of a box of grapes $= 9$ kg 395 g
Weight of 76 boxes $= 76 \times 9.395$
$= 714$ kg 02 g

$$\begin{array}{r} 9.395 \\ \times\ 76 \\ \hline 56.370 \\ +\ 657.650 \\ \hline 714.020 \end{array}$$

Division

Let Us Do-5A

1. $7\overline{)884}$ Q = 126, R = 2

$$\begin{array}{r} 126 \\ 7\overline{)884} \\ -7\downarrow \\ \hline 18 \\ -14\downarrow \\ \hline 44 \\ -42 \\ \hline 2 \end{array}$$

2. $9\overline{)783}$ Q = 87, R = 0

$$\begin{array}{r} 87 \\ 9\overline{)783} \\ -72\downarrow \\ \hline 63 \\ -63 \\ \hline 0 \end{array}$$

3. $16\overline{)7809}$ Q = 488, R = 1

$$\begin{array}{r} 488 \\ 16\overline{)7809} \\ -64\downarrow \\ \hline 140 \\ -128\downarrow \\ \hline 129 \\ -128 \\ \hline 1 \end{array}$$

4. $15\overline{)6704}$ Q = 446, R = 14

$$\begin{array}{r} 446 \\ 15\overline{)6704} \\ -60\downarrow \\ \hline 70 \\ -60\downarrow \\ \hline 104 \\ -90 \\ \hline 14 \end{array}$$

5.

```
      3 6 5
17 ) 6 2 0 9
     −5 1
       1 1 0
     −1 0 2
         8 9
       − 8 5
           4
```

Q = 365
R = 4

6.

```
      4 0 1
19 ) 7 6 1 9
     −7 6
       0 1 9
       − 1 9
           0
```

Q = 401
R = 0

7.

```
      4 6 4
18 ) 8 3 6 9
     −7 2
       1 1 6
     −1 0 8
         8 9
       − 7 2
         1 7
```

Q = 464
R = 17

8.

```
      3 4 2
14 ) 4 7 9 3
     −4 2
       5 9
     −5 6
         3 3
       −2 8
           5
```

Q = 342
R = 5

9.

```
      2 6 5
29 ) 7 7 0 8
     −5 8
       1 9 0
     −1 7 4
         1 6 8
       −1 4 5
           2 3
```

Q = 265
R = 23

10.

```
      1 2 9
36 ) 4 6 6 9
     −3 6
       1 0 6
     −7 2
         3 4 9
       −3 2 4
           2 5
```

Q = 129
R = 25

11.

```
      1 6 0
35 ) 5 6 0 3
     −3 5
       2 1 0
     −2 1 0
           3
```

Q = 160
R = 3

12.

```
      1 5 0
29 ) 4 3 6 2
     −2 9
       1 4 6
     −1 4 5
           1 2
```

Q = 150
R = 12

13.

```
      3 6 3
24 ) 8 7 2 4
     −7 2
       1 5 2
     −1 4 4
           8 4
         − 7 2
           1 2
```

Q = 363
R = 12

14.

```
      1 5 1
   ┌─────────
36 ) 5 4 5 6
     − 3 6 ↓
     ─────
       1 8 5
     − 1 8 0 ↓
     ─────────
         5 6
       − 3 6
       ─────
         2 0
```

Q = 151
R = 20

15.

```
      6 3
   ┌─────────
87 ) 5 4 8 9
     − 5 2 2 ↓
     ─────────
       2 6 9
     − 2 6 1
     ─────
         8
```

Q = 63
R = 8

16.

```
      6 5 8
   ┌─────────
55 ) 3 6 2 2 5
     − 3 3 0 ↓
     ─────────
       3 2 2
     − 2 7 5 ↓
     ─────────
         4 7 5
       − 4 4 0
       ─────
           3 5
```

Q = 658
R = 35

17.

```
      5 4 9
   ┌─────────
73 ) 4 0 0 9 4
     − 3 6 5 ↓
     ─────────
       3 5 9
     − 2 9 2 ↓
     ─────────
         6 7 4
       − 6 5 7
       ─────
           1 7
```

Q = 549
R = 17

18.

```
      1 4 6 0
   ┌─────────
48 ) 7 0 0 8 0
     − 4 8 ↓
     ─────────
       2 2 0
     − 1 9 2 ↓
     ─────────
         2 8 8
       − 2 8 8
       ─────
           0
```

Q = 1460
R = 0

19.

```
      1 2 4 7
   ┌─────────
57 ) 7 1 1 1 6
     − 5 7 ↓
     ─────────
       1 4 1
     − 1 1 4 ↓
     ─────────
         2 7 1
       − 2 2 8 ↓
       ─────────
           4 3 6
         − 3 9 9
         ─────
             3 7
```

Q = 1247
R = 37

20.

```
      1 1 3 6
   ┌─────────
86 ) 9 7 7 0 8
     − 8 6 ↓
     ─────────
       1 1 7
     − 8 6 ↓
     ─────────
         3 1 0
       − 2 5 8 ↓
       ─────────
           5 2 8
         − 5 1 6
         ─────
             1 2
```

Q = 1136
R = 12

Let Us Do-5B

1.

```
      6 7 2
10 ) 6 7 2 0
   – 6 0 ↓
     7 2
   – 7 0 ↓
       2 0
     – 2 0
       0
```

Q = 672
R = 0

2.

```
      9 6 5
10 ) 9 6 5 9
   – 9 0 ↓
     6 5
   – 6 0 ↓
       5 9
     – 5 0
       9
```

Q = 965
R = 9

3.

```
      8 9 6
10 ) 8 9 6 7
   – 8 0 ↓
     9 6
   – 9 0 ↓
       6 7
     – 6 0
       7
```

Q = 896
R = 7

4.

```
      5 4 6 7
10 ) 5 4 6 7 9
   – 5 0 ↓
     4 6
   – 4 0 ↓
       6 7
     – 6 0 ↓
         7 9
       – 7 0
         9
```

Q = 5467
R = 9

5.

```
      9 6 7 8
10 ) 9 6 7 8 5
   – 9 0 ↓
     6 7
   – 6 0 ↓
       7 8
     – 7 0 ↓
         8 5
       – 8 0
         5
```

Q = 9678
R = 5

6.

```
        8 9
100 ) 8 9 7 6
    – 8 0 0 ↓
      9 7 6
    – 9 0 0
      7 6
```

Q = 89
R = 76

7.

```
        4 5
100 ) 4 5 3 9
    – 4 0 0 ↓
      5 3 9
    – 5 0 0
      3 9
```

Q = 45
R = 39

8.

```
        6 9 7
100 ) 6 9 7 8 0
    – 6 0 0 ↓
      9 7 8
    – 9 0 0 ↓
      7 8 0
    – 7 0 0
      8 0
```

Q = 697
R = 80

9.

```
        9 9 9
100 ) 9 9 9 0 0
    – 9 0 0 ↓
      9 9 0
    – 9 0 0 ↓
      9 0 0
    – 9 0 0
        0
```

Q = 999
R = 0

10.

```
        5 4 5 6
100 ) 5 4 5 6 8 5
    − 5 0 0
      4 5 6
    − 4 0 0
      5 6 8
    − 5 0 0
        6 8 5
      − 6 0 0
          8 5
```

Q = 5456
R = 85

11.

```
        8 9 5 4
100 ) 8 9 5 4 5 0
    − 8 0 0
      9 5 4
    − 9 0 0
        5 4 5
    − 5 0 0
          4 5 0
        − 4 0 0
            5 0
```

Q = 8954
R = 50

12.

```
        4 7 5 6
100 ) 4 7 5 6 0 0
    − 4 0 0
      7 5 6
    − 7 0 0
        5 6 0
    − 5 0 0
          6 0 0
        − 6 0 0
            0
```

Q = 4756
R = 0

13.

```
        8 6 6 6
100 ) 8 6 6 6 5 0
    − 8 0 0
      6 6 6
    − 6 0 0
        6 6 5
    − 6 0 0
          6 5 0
        − 6 0 0
            5 0
```

Q = 8666
R = 50

14.

```
          9
1000 ) 9 3 2 1
     − 9 0 0 0
       3 2 1
```

Q = 9
R = 321

15.

```
          3 6 7
1000 ) 3 6 7 8 6 0
     − 3 0 0 0
       6 7 8 6
     − 6 0 0 0
         7 8 6 0
       − 7 0 0 0
           8 6 0
```

Q = 367
R = 860

16.

```
          4 8 9
1000 ) 4 8 9 0 0 5
     − 4 0 0 0
       8 9 0 0
     − 8 0 0 0
         9 0 0 5
       − 9 0 0 0
             5
```

Q = 489
R = 5

17.

```
          9 5 9
1000 ) 9 5 9 0 0 0
     − 9 0 0 0
       5 9 0 0
     − 5 0 0 0
         9 0 0 0
       − 9 0 0 0
             0
```

Q = 959
R = 0

18.

```
          436
1000 ) 436095
       -4000↓
         3609
       -3000↓
          6095
        -6000
           95
```

Q = 436
R = 95

19.

```
          256
1000 ) 256703
       -2000↓
         5670
       -5000↓
          6703
        -6000
           703
```

Q = 256
R = 703

20.

```
          354
1000 ) 354506
       -3000↓
         5450
       -5000↓
          4506
        -4000
           506
```

Q = 354
R = 506

Let Us Do-5C

1. Seats are obtained by dividing 1121 by 19

No. of seats in each row $= 1121 \div 19$

$= 59$

```
          59
19 ) 1121
     - 95↓
       171
      -171
         0
```

2. Total rupees of each girl obtained by dividing 1513 by 17

Total money of each girls $= 1513 \div 17$

$= 89$

```
          89
17 ) 1513
     -136↓
       153
      -153
         0
```

3. Total amount of each person obtained by dividing 30555 by 45

each person get $= ₹\ 30555 \div 45$

$= ₹\ 679$

```
          679
45 ) 30555
     -270↓
       355
      -315↓
        405
       -405
          0
```

4. Carts to load obtained by dividing 11500 by 92

Total carts $= 11500 \div 92$

$= 125$

```
          125
92 ) 11500
     - 92↓
       230
      -184↓
        460
       - 460
          0
```

5. Greatest number of five digits $= 99999$

Thus, dividing 99999

by 35 $= 99999 \div 35$

quotient $= 2857$

remainder $= 4$

$$
\begin{array}{r}
2857 \\
35 \overline{)\,99999} \\
-70\downarrow \\
\hline
299 \\
-280 \\
\hline
199 \\
-175 \\
\hline
249 \\
-245 \\
\hline
4
\end{array}
$$

6. First divide 10000 (smallest 5 digit number) by 75

Now, we have to subtract remainder (25) from 75

$$75 - 25 = 50$$

Now, add this number to 10000 $= 10000 + 50$

$= 10050$

$$
\begin{array}{r}
133 \\
75 \overline{)\,10000} \\
-75\downarrow \\
\hline
250 \\
-225 \\
\hline
250 \\
-225 \\
\hline
25
\end{array}
$$

7. Greatest 5-digit number $= 99999$

First divide 99999 by 56

Remainder $= 39$

Now, subtract remainder from 99999.

$= 99999 - 39$

$= 99960$

$$
\begin{array}{r}
1785 \\
56 \overline{)\,99999} \\
-56\downarrow \\
\hline
439 \\
-392 \\
\hline
479 \\
-448 \\
\hline
319 \\
-280 \\
\hline
39
\end{array}
$$

8. First divide 15100 by 65

Remainder $= 20$

Now subtract R by Divider $= 65 - 20$

$= 45$

Now, add this number = 15100 + 45

= 15145

$$
\begin{array}{r}
232 \\
65 \overline{)\,15100} \\
-130\downarrow \\
\hline
210 \\
-195 \\
\hline
150 \\
-130 \\
\hline
20
\end{array}
$$

9. Total apples were obtained by dividing by 21457 & 43 Apple packed in boxes

$= 21457 \div 43$

$= 499$ apples

```
      499
43 ) 21457
    -172↓
      425
     -387↓
       387
      -387
         0
```

10. Total oranges $= 7900$

Rotten oranges $= 16$

Remaining oranges $= 7900 - 16$

$= 7884$

Total oranges in box were obtained by dividing $7884 \div 73$

Total oranges packed in each box

$= 7884 \div 73$

$= 108$ oranges

```
      108
73 ) 7884
    -730↓
      584
     -584
        0
```

11. Total pages $= 1648$

Neha reads daily $= 46$

Now $= 1648 \div 46$

Total days $= 35$

Last day pages $= 38$

```
       35
46 ) 1648
    -138↓
      268
     -230
       38
```

12. Total apple $= 85329$

Rotten apple $= 67$

Remaining apple $= 85329 - 67 = 85262$

Number of apples obtained by dividing 85262 by 89

Total apple packed in each box

$= 85262 \div 89$

$= 958$ apples

```
       958
89 ) 85262
    -801↓
      516
     -445↓
       712
      -712
         0
```

13. Each officers salary were obtained by dividing 78430 by 22

Total salary $= 78430 \div 22$

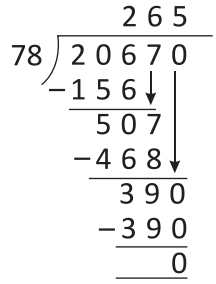
$= ₹\ 3565$

```
22 ) 78430 ) 3565
    -66↓
      124
     -110↓
       143
      -132↓
        110
       -110
          0
```

14. Other number were obtained
by dividing 20,670 by 78

other number $= 20670 \div 78$

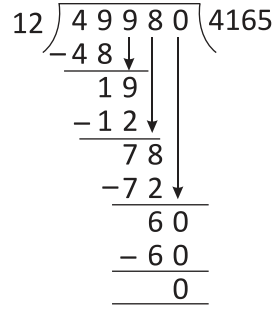
$= 265$



15. Monthly rent were obtained
by dividing 49980 by 12

Monthly rent $= 49980 \div 12$

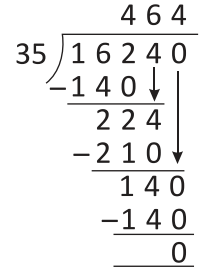
$= ₹\ 4165$



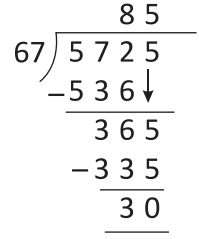
16. Each person amount were obtained
by dividing $16240 \div 35$

Each person recieve $= 16240 \div 35$

$= ₹\ 464$



17. First divide 5725 by 67
R = 30
so the least number is 30



18. Total cost of one cycle obtained by dividing 21514.65 by 15

cost of one cycle

= 21514 ÷ 15

= ₹ 1434.31

```
      1434.31
   ┌──────────
15 ) 21514.65
   −15
   ──
     65
    −60
    ──
      51
     −45
     ──
      64
     −60
     ──
      46
     −45
     ──
      15
     −15
     ──
       0
```

19. Weight of one bag were obtained by dividing 1628.2 ÷ 28

weight of one bag

= 1628.2 ÷ 28

= 58.150

= 58 kg 150 g

```
      58.150
   ┌──────────
28 ) 1628.2
   −140
   ────
     228
    −224
    ────
       42
      −28
      ──
       140
      −140
      ────
         0
```

20. Total students in school = 2056

stand in rows = 25

left students = 2056 ÷ 25

Q = 82 rows

R = 6 students left

```
      82
   ┌──────
25 ) 2056
   −200
   ────
      56
     −50
     ──
       6
```

21. First divide

4325 ÷ 47

R = 1

so the least number is 1

```
      92
   ┌──────
47 ) 4325
   −423
   ────
      95
     −94
     ──
       1
```

22. First divide 27885 ÷ 58

R = 45

Now subtract = 58 − 45 = 13

So the least number is 13

```
      480
   ┌──────
58 ) 27885
   −232
   ────
     468
    −464
    ────
       45
```

Problems on Four Fundamental Operations

Let Us Do-6A

1. Step 1 Addition of numbers with (+) sign

$$\begin{array}{r} {\scriptstyle ①\,①\,①\,\,\,} \\ 6\;2\;9\;5\;6 \\ +\;2\;0\;2\;8\;6 \\ \hline 8\;3\;2\;4\;2 \end{array}$$

Step 2 Addition of numbers with (–) sign

$$\begin{array}{r} {\scriptstyle ①\,①\,\,\,①} \\ 1\;8\;9\;0\;7 \\ +\;3\;5\;6\;7\;6 \\ \hline 5\;4\;5\;8\;3 \end{array}$$

Step 3 Now subtract

$$\begin{array}{r} 8\;3\;2\;4\;2 \\ -\;5\;4\;5\;8\;3 \\ \hline 2\;8\;6\;5\;9 \end{array}$$

2. Step 1

$$\begin{array}{r} {\scriptstyle ①\,①\,①\,①\,\,} \\ 3\;6\;5\;8\;4 \\ +\;4\;6\;9\;6\;8 \\ \hline 8\;3\;5\;5\;2 \end{array}$$

Step 2

$$\begin{array}{r} {\scriptstyle ①\,①\,①\,①\,\,} \\ 2\;6\;9\;7\;3 \\ +\;3\;7\;9\;6\;7 \\ \hline 6\;4\;9\;4\;0 \end{array}$$

Step 3

$$\begin{array}{r} 8\;3\;5\;5\;2 \\ -\;6\;4\;9\;4\;0 \\ \hline 1\;8\;6\;1\;2 \end{array}$$

3. (i)

$$\begin{array}{r} {\scriptstyle ①\,①\,②\,①\,\,} \\ 3\;0\;6\;7\;2 \\ 5\;5\;9\;4\;5 \\ +\;\;\;1\;1\;9\;6 \\ \hline 8\;7\;8\;1\;3 \end{array}$$

(ii)

$$\begin{array}{r} {\scriptstyle ①\,①\,①\,①\,\,} \\ 6\;6\;8\;4\;6 \\ +\;\;\;3\;6\;8\;7 \\ \hline 7\;0\;5\;3\;3 \end{array}$$

(iii)

$$\begin{array}{r} 8\;7\;8\;1\;3 \\ -\;7\;0\;5\;3\;3 \\ \hline 1\;7\;2\;8\;0 \end{array}$$

4. (i)

$$\begin{array}{r} \overset{\textcircled{1}\textcircled{1}\textcircled{2}}{} \\ 47109 \\ 1956 \\ +\quad\quad 49 \\ \hline 49114 \end{array}$$

(ii)

$$\begin{array}{r} \overset{\textcircled{1}\textcircled{1}\textcircled{1}\textcircled{1}}{} \\ 26938 \\ +\ 8070 \\ \hline 35008 \end{array}$$

(iii)

$$\begin{array}{r} 49114 \\ -\ 35008 \\ \hline 14106 \end{array}$$

5. First Multiply $=$

$$\begin{array}{r} 153 \\ \times\ 17 \\ \hline 1071 \\ +\ 153\times \\ \hline 2601 \end{array}$$

Now, $2489 - 2601 + 1951 =$

$$\begin{array}{r} \overset{\textcircled{1}\textcircled{1}\textcircled{1}}{} \\ 2489 \\ +\ 1951 \\ \hline 4440 \end{array} \qquad \begin{array}{r} 4440 \\ -\ 2601 \\ \hline 1839 \end{array}$$

6. First divide :

$= 638 - 14 - 95 + 5 \times 108$

Now multiply :

$$\begin{array}{r} 108 \\ \times\ 5 \\ \hline 540 \end{array}$$

$$23\overline{)322}\ \begin{array}{l} 14 \\ -23 \\ \hline 92 \\ -92 \\ \hline 0 \end{array}$$

$= 638 - 14 - 95 + 540$

Now

$$\begin{array}{r} 638 \\ +\ 540 \\ \hline 1178 \end{array} \qquad \begin{array}{r} 14 \\ +\ 95 \\ \hline 109 \end{array} \qquad \begin{array}{r} 1178 \\ -\ 109 \\ \hline 1069 \end{array}$$

7. First divide :

$$34\overline{)2346}\ \begin{array}{l} 69 \\ -204 \\ \hline 306 \\ -306 \\ \hline 0 \end{array}$$

8. First divide :

$$42\overline{)630}\ \begin{array}{l} 15 \\ -42 \\ \hline 210 \\ -210 \\ \hline 0 \end{array}$$

$25623 + 600 \times 13 - 69$

Then multiply :

$$\begin{array}{r} 600 \\ \times\ 13 \\ \hline 1800 \\ 6000 \\ \hline 7800 \end{array}$$

Now : $25623 + 7800 - 69$

$$\begin{array}{r} {\scriptstyle ①①} \\ 25623 \\ +\ 7800 \\ \hline 33423 \end{array} \qquad \begin{array}{r} 33423 \\ -\ 69 \\ \hline 33354 \end{array}$$

$329 \times 71 - 15$

Then multiply :

$$\begin{array}{r} 329 \\ \times\ 71 \\ \hline 329 \\ 23030 \\ \hline 23359 \end{array}$$

$= 23359 - 15$

$$\begin{array}{r} 23359 \\ -\ 15 \\ \hline 23344 \end{array}$$

9. First divide :

$$\begin{array}{r} 2 \\ 16\overline{)\,32} \\ -32 \\ \hline 0 \end{array}$$

$425 + 728 \times 2 - 319$

Then multiply :

$$\begin{array}{r} {\scriptstyle ①} \\ 728 \\ \times\ 2 \\ \hline 1456 \end{array}$$

Now : $425 + 1456 - 319$

$$\begin{array}{r} {\scriptstyle ①} \\ 1456 \\ +\ 425 \\ \hline 1881 \end{array} \qquad \begin{array}{r} 1881 \\ -\ 319 \\ \hline 1562 \end{array}$$

10. First divide :

$$\begin{array}{r} 144 \\ 3\overline{)\,432} \\ -3\downarrow \\ \hline 13 \\ -12\downarrow \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

$= 15629 + 144 \times 15$

Then multiply :

$$\begin{array}{r} 144 \\ \times\ 15 \\ \hline 720 \\ 1440 \\ \hline 2160 \end{array}$$

Now : $15629 + 2160 =$

$$\begin{array}{r} 15629 \\ +\ 2160 \\ \hline 17789 \end{array}$$

11. First divide :

$$\begin{array}{r} 114 \\ 67\overline{)7638} \\ -67\downarrow \\ \hline 93 \\ -\ 67 \\ \hline 268 \\ -\ 268 \\ \hline 0 \end{array}$$

$= 10519 + 114 \times 9 - 416$

Then multiply :

$$\begin{array}{r} 114 \\ \times\ 9 \\ \hline 1026 \end{array}$$

Now : $10519 + 1026 - 416$

$$\begin{array}{r} 10519 \\ +\ 1026 \\ \hline 11545 \end{array} \qquad \begin{array}{r} 11545 \\ -\ 416 \\ \hline 11129 \end{array}$$

12. First divide :

$$\begin{array}{r} 456 \\ 7\overline{)3192} \\ -28 \\ \hline 39 \\ -35 \\ \hline 42 \\ -42 \\ \hline 0 \end{array}$$

Then multiply :

$$\begin{array}{r} 45 \\ \times\ 8 \\ \hline 360 \end{array}$$

Now : $5926 - 4809 + 456 + 360$

$$\begin{array}{r} \textcircled{1}\textcircled{1}\textcircled{1} \\ 5926 \\ +\ 456 \\ \ 360 \\ \hline 6742 \end{array} \qquad \begin{array}{r} 6742 \\ -\ 4809 \\ \hline 1933 \end{array}$$

7 Factors and Multiples (Including H.C.F and L.C.M)

Let Us Do-7A

1. Yes, **2.** Yes, **3.** Yes, **4.** 1, 2, 3, 4, 6, 12, **5.** 1, 5, 7, 35, **6.** 2, 4, 6, 8, 12, 16, 24, 48, 96

7. $3 \times 1 = 3$ $\qquad$ $3 \times 2 = 6$

$3 \times 3 = 9$ $\qquad$ $3 \times 4 = 12$

8. $9 \times 1 = 9, 9 \times 2 = 18, 9 \times 3 = 27, 9 \times 4 = 36, 9 \times 5 = 45$

9. $19 \times 1 = 19, 19 \times 2 = 38, 19 \times 3 = 57$

10. $21 \times 1 = 21, 21 \times 2 = 42, 21 \times 3 = 63, 21 \times 4 = 84$;

11. $19 \times 10 = 190$

12. $20 \times 7 = 140$; **13.** $16 \times 15 = 240$; **14.** 39; **15.** 1

16. $5 \times 8 = 40, 5 \times 9 = 45$

17. $9 \times 10 = 90, 9 \times 11 = 99, 9 \times 12 = 108, 9 \times 13 = 117, 9 \times 14 = 126$

Let Us Do-7B

1. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59.

2. 4, 6, 8, 9, 10, 12, 14, 15, 16, 18.

3. (a) 23; (b) 31; (c) 47; (d) 73; (e) 89;

4. (a) 5; (b) 11; (c) 29; (d) 47; (e) 67; (f) 83; (g) 97

5. (2, 3), (3, 5), (5, 7), (11, 13), (17, 19), (29, 31), (41, 43) and (59, 61) and (71, 73).

6. (3, 5), (11, 13), (17, 19), (29, 31) and (59, 61).

7. 61, 67, 71, 73, 79, 83 and 89.

8. 111, 113, 119, 121, 127, 131, 133, 143, 149.

9. (2, 3), (2, 11) and (2, 17).

10. (a)

2	4 2
3	2 1
7	7
	1

= 2, 3, 7

(b)

2	7 2
2	3 6
2	1 8
3	9
3	3
	1

= 2, 3

(c)

2	9 6
2	4 8
2	2 4
2	1 2
2	6
3	3
	1

= 2, 3

(d)

2	1 1 6
2	5 8
2 9	2 9
	1

= 2, 29

(e)

2	1 9 8
3	9 9
3	3 3
1 1	1 1
	1

= 2, 3, 11

(f)

2	2 3 0
5	1 1 5
2 3	2 3
	1

= 2, 5, 23

11. (2, 3)

Let Us Do-7C

1. Numbers divisible by 2 are : (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k) and (l).

Numbers divisible by 4 are : (c), (d), (e), (f), (i) and (l).

Numbers divisible by 8 are : (d), (i) and (l).

2. Numbers divisible by 3 are : (a), (b), (c), (d), (e), (f), (g), (h), (i), (j) and (l).
Numbers divisible by 6 are : (a), (b), (c), (d), (f) and (j).
Numbers divisible by 9 are : (a), (b), (c) and (e).

3. Numbers divisible by 5 are : (a), (b), (c), (d), (e) and (f).
Numbers divisible by 10 are : (a), (c) and (f).

4. Numbers divisible by 11 are : (a), (b), (c), (d) and (e).

Let Us Do-7D

1.

3	9
3	3
	1

3	21
7	7
	1

$9 = \boxed{3} \times 3$
$21 = \boxed{3} \times 7$
HCF = 3

2.

2	20
2	10
5	5
	1

5	25
5	5
	1

$20 = 2 \times 2 \times \boxed{5}$
$25 = 5 \times \boxed{5}$
HCF = 5

3.

2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

$12 = \boxed{2} \times \boxed{2} \times \boxed{3}$
$36 = \boxed{2} \times \boxed{2} \times \boxed{3} \times 3$
HCF = 2 × 2 × 3 = 12

4.

3	15
5	5
	1

3	75
5	25
5	5
	1

$15 = \boxed{3} \times \boxed{5}$
$75 = \boxed{3} \times \boxed{5} \times 5$
HCF = 3 × 5 = 15

5.

2	48
2	24
2	12
2	6
3	3
	1

2	108
2	54
3	27
3	9
3	3
	1

$48 = \boxed{2} \times \boxed{2} \times 2 \times 2 \times \boxed{3}$
$108 = \boxed{2} \times \boxed{2} \times 3 \times 3 \times \boxed{3}$
HCF = 2 × 2 × 3 = 12

6.

3	57
19	19
	1

5	95
19	19
	1

$57 = 3 \times \boxed{19}$
$95 = 5 \times \boxed{19}$
HCF = 19

7.

2	42
3	21
7	7
	1

2	56
2	28
2	14
7	7
	1

2	70
5	35
7	7
	1

$42 = \boxed{2} \times 3 \times \boxed{7}$

$56 = \boxed{2} \times 2 \times 2 \times \boxed{7}$

$70 = \boxed{2} \times 5 \times \boxed{7}$

HCF $= 2 \times 7 = 14$

8.

2	48
2	24
2	12
2	6
3	3
	1

2	72
2	36
2	18
3	9
3	3
	1

$48 = \boxed{2} \times \boxed{2} \times \boxed{2} \times 2 \times \boxed{3}$

$72 = \boxed{2} \times \boxed{2} \times \boxed{2} \times 3 \times \boxed{3}$

HCF $= 2 \times 2 \times 2 \times 3 = 24$

9.

2	16
2	8
2	4
2	2
	1

5	35
7	7
	1

$16 = 2 \times 2 \times 2 \times 2$

$35 = 5 \times 7$

HCF $= 1$

10.

2	48
2	24
2	12
2	6
3	3
	1

2	72
2	36
2	18
3	9
3	3
	1

2	96
2	48
2	24
2	12
2	6
3	3
	1

$48 = \boxed{2} \times \boxed{2} \times \boxed{2} \times 2 \times \boxed{3}$

$72 = \boxed{2} \times \boxed{2} \times \boxed{2} \times 3 \times \boxed{3}$

$96 = \boxed{2} \times \boxed{2} \times \boxed{2} \times 2 \times 2 \times \boxed{3}$

HCF $= 2 \times 2 \times 2 \times 3 = 24$

11.

3	15
5	5
	1

2	30
3	15
5	5
	1

2	60
2	30
3	15
5	5
	1

$15 = 3 \times 5$
$30 = 2 \times 3 \times 5$
$60 = 2 \times 2 \times 3 \times 5$
HCF $= 3 \times 5 = 15$

12.

$25 = 5 \times (5)$
$30 = 2 \times 3 \times (5)$
$35 = (5) \times 7$
HCF $= 5$

5	25
5	5
	1

2	30
3	15
5	5
	1

5	35
7	7
	1

13. Yes; **14.** No; **15.** Yes; **16.** No; **17.** Yes;

18.

2	54
3	27
3	9
3	3
	1

2	72
2	36
2	18
3	9
3	3
	1

$54 = 2 \times 3 \times 3 \times 3$
$72 = 2 \times 2 \times 2 \times 3 \times 3$
HCF $= 2 \times 3 \times 3 = 18$

19.

2	28
2	14
7	7
	1

7	63
9	9
	1

$28 = 2 \times 2 \times (7)$
$63 = (7) \times 9$
HCF $= 7$

20.

2	24
2	12
2	6
3	3
	1

2	48
2	24
2	12
2	6
3	3
	1

2	60
2	30
3	15
5	5
	1

$24 = 2 \times 2 \times 2 \times 3$
$48 = 2 \times 2 \times 2 \times 2 \times 3$
$60 = 2 \times 2 \times 3 \times 5$
HCF $= 2 \times 2 \times 3 = 12$

21.

2	20
2	10
5	5
	1

2	30
3	15
5	5
	1

2	40
2	20
2	10
5	5
	1

$20 = 2 \times 2 \times 5$

$30 = 2 \times 3 \times 5$

$40 = 2 \times 2 \times 2 \times 5$

HCF $= 2 \times 5 = 10$

22.

$14 = 2 \times 7$

$28 = 2 \times 2 \times 7$

$35 = 5 \times 7$

HCF $= 7$

2	14
7	7
	1

2	28
2	14
7	7
	1

5	35
7	7
	1

23.

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

2	96
2	48
2	24
2	12
2	6
3	3
	1

$24 = 2 \times 2 \times 2 \times 3$

$36 = 2 \times 2 \times 3 \times 3$

$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

HCF $= 2 \times 2 \times 3 = 12$

24.

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

2	36
2	18
3	9
3	3
	1

$12 = 2 \times 2 \times 3$

$18 = 2 \times 3 \times 3$

$36 = 2 \times 2 \times 3 \times 3$

HCF $= 2 \times 3 = 6$

25.

2	160
2	80
2	40
2	20
2	10
5	5
	1

2	150
3	75
5	25
5	5
	1

2	210
3	105
5	35
7	7
	1

$160 = \boxed{2} \times 2 \times 2 \times 2 \times \textcircled{5}$

$150 = \boxed{2} \times 3 \times \textcircled{5} \times 5$

$210 = \boxed{2} \times 3 \times \textcircled{5} \times 7$

HCF $= 2 \times 5 = 10$

Let Us Do-7E

Five Multiples

Pair	of first number	of second number	common multiples	L.C.M
1. 2 and 3	2, 4, 6, 8, 10	3, 6, 9, 12, 15	6	6
2. 4 and 5	4, 8, 12, 16, 20	5, 10, 15, 20, 25	20	20
3. 3 and 6	3, 6, 9, 12, 15	6, 12, 18, 24, 30	12	12
4. 6 and 12	6, 12, 18, 24, 30	12, 24, 36, 48, 60	24	24
5. 4 and 8	4, 8, 12, 16, 20	8, 16, 24, 32, 40	16	16

6.

2	6, 18
3	3, 9
3	1, 3
	1, 1

LCM $= 2 \times 3 \times 3 = 18$

7.

2	3, 4
2	3, 2
3	3, 1
	1, 1

LCM $= 2 \times 2 \times 3 = 12$

8.

3	5, 15
5	5, 5
	1, 1

$LCM = 3 \times 5 = 15$

9.

3	7, 9
3	7, 3
7	7, 1
	1, 1

$LCM = 3 \times 3 \times 7 = 63$

10.

2	7, 14
7	7, 7
	1, 1

$LCM = 2 \times 7 = 14$

11.

2	2, 3, 6
3	1, 3, 3
	1, 1, 1

$LCM = 2 \times 3 = 6$

12.

2	4, 8, 12
2	2, 4, 6
2	1, 2, 3
3	1, 1, 3
	1, 1, 1

$LCM = 2 \times 2 \times 2 \times 3 = 24$

13.

2	3, 5, 10
3	3, 5, 5
5	1, 5, 5
	1, 1, 1

$LCM = 2 \times 3 \times 5 = 30$

14.

2	3, 4, 6
2	3, 2, 3
3	3, 1, 3
	1, 1, 1

$LCM = 2 \times 2 \times 3 = 12$

15.

2	3, 9, 12
2	3, 9, 6
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

$LCM = 2 \times 2 \times 3 \times 3 = 36$

16.

3	5, 15, 25
5	5, 5, 25
5	1, 1, 5
	1, 1, 1

$LCM = 3 \times 5 \times 5 = 75$

17.

2	3, 6, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

$LCM = 2 \times 3 \times 3 = 18$

18.

2	4, 6, 8
2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

$LCM = 2 \times 2 \times 2 \times 3 = 24$

19.

2	4, 5, 6
2	2, 5, 3
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

$LCM = 2 \times 2 \times 3 \times 5 = 60$

20.

2	12, 15, 20
2	6, 15, 10
3	3, 15, 5
5	1, 5, 5
	1, 1, 1

LCM = 2×2×3×5=60

21.

2	8, 12, 16
2	4, 6, 8
2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

LCM = 2×2×2×2×3 = 48

22.

2	12, 16, 24
2	6, 8, 12
2	3, 4, 6
2	3, 2, 3
3	3, 1, 3
	1, 1, 1

LCM = 2 × 2 × 2 × 2 × 3 = 48

23.

2	18, 27, 36
2	9, 27, 18
3	9, 27, 9
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

LCM = 2 × 2 × 3 × 3 × 3 = 108

24.

2	15, 20, 35
2	15, 10, 35
3	15, 5, 35
5	5, 5, 35
7	1, 1, 7
	1, 1, 1

LCM = 2 × 2 × 3 × 5 × 7 = 420

25.

2	14, 21, 63, 84
2	7, 21, 63, 42
3	7, 21, 63, 21
3	7, 7, 21, 7
7	7, 7, 7, 7
	1, 1, 1, 1

LCM = 2 × 2 × 3 × 3 × 7 = 252

26.

2	16, 20, 24
2	8, 10, 12
2	4, 5, 6
2	2, 5, 3
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

LCM = 2 × 2 × 2 × 2 × 3 × 5 = 240

27.

2	6, 15, 25, 30
3	3, 15, 25, 15
5	1, 5, 25, 5
5	1, 1, 5, 1
	1, 1, 1, 1

LCM = 2 × 3 × 5 × 5 = 150

8 Fraction

Let Us Do-8A

1. (a) $\frac{3}{5}$; (b) $\frac{5}{9}$; (c) $\frac{3}{6}$; (d) $\frac{6}{12}$ **2.** (a) $\frac{2}{8}$; (b) $\frac{4}{8}$; (c) $\frac{6}{12}$; (d) $\frac{2}{5}$

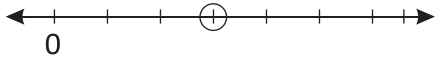
3. (a) $\frac{6}{7}$; (b) $\frac{2}{5}$; (c) $\frac{9}{10}$; (d) $\frac{3}{9}$; (e) $\frac{4}{6}$; (f) $\frac{7}{10}$; (g) $\frac{3}{5}$; (h) $\frac{6}{9}$; (i) $\frac{1}{7}$

4. (a) 2, 3; (b) 3, 5; (c) 2, 8; (d) 6, 10; (e) 11, 25; (f) 7, 13; (g) 11, 36; (h) 27, 35

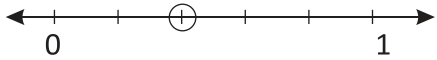
5. (a) $\frac{3}{7}$; (b) $\frac{2}{9}$; (c) $\frac{14}{15}$; (d) $\frac{7}{11}$; (e) $\frac{13}{16}$; (f) $\frac{24}{25}$; (g) $\frac{21}{28}$; (h) $\frac{17}{20}$; (i) $\frac{19}{27}$; (j) $\frac{27}{35}$

6. (a) $\frac{1}{3}$; (b) $\frac{5}{6}$; (c) $\frac{5}{8}$; (d) $\frac{2}{8}$

7. (a)



(b)



Let Us Do-8B

1. (a) $\frac{1}{4}=\frac{1}{4}\times\frac{2}{2}=\frac{2}{8}$, $\frac{1}{4}=\frac{1}{4}\times\frac{3}{3}=\frac{3}{12}$, $\frac{1}{4}=\frac{1}{4}\times\frac{4}{4}=\frac{4}{16}$, $\frac{1}{4}=\frac{1}{4}\times\frac{5}{5}=\frac{5}{20}$

$\Rightarrow \mathbf{\frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}}$

(b) $\frac{1}{6}\times\frac{2}{2}=\frac{2}{12}$, $\frac{1}{6}\times\frac{3}{3}=\frac{3}{18}$, $\frac{1}{6}\times\frac{4}{4}=\frac{4}{24}$, $\frac{1}{6}\times\frac{5}{5}=\frac{5}{30}$

$\Rightarrow \mathbf{\frac{2}{12}, \frac{3}{18}, \frac{4}{24}, \frac{5}{30}}$

(c) $\frac{2}{5}\times\frac{2}{2}=\frac{4}{10}$, $\frac{2}{5}\times\frac{3}{3}=\frac{6}{15}$, $\frac{2}{5}\times\frac{4}{4}=\frac{8}{20}$, $\frac{2}{5}\times\frac{5}{5}=\frac{10}{25}$

$\Rightarrow \mathbf{\frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}}$

(d) $\frac{4}{9}\times\frac{2}{2}=\frac{8}{18},\ \frac{4}{9}\times\frac{3}{3}=\frac{12}{27},\frac{4}{9}\times\frac{4}{4}=\frac{16}{36},\frac{4}{9}\times\frac{5}{5}=\frac{20}{45}$

$\Rightarrow \mathbf{\frac{8}{18},\frac{12}{27},\frac{16}{36},\frac{20}{45}}$

(e) $\frac{3}{8}\times\frac{2}{2}=\frac{6}{16},\frac{3}{8}\times\frac{3}{3}=\frac{9}{24},\frac{3}{8}\times\frac{4}{4}=\frac{12}{32},\frac{3}{8}\times\frac{5}{5}=\frac{15}{40}$

$\Rightarrow \mathbf{\frac{6}{16},\frac{9}{24},\frac{12}{32},\frac{15}{40}}$

(f) $\frac{7}{9}\times\frac{2}{2}=\frac{14}{18},\frac{7}{9}\times\frac{3}{3}=\frac{21}{27},\frac{7}{9}\times\frac{4}{4}=\frac{28}{36},\frac{7}{9}\times\frac{5}{5}=\frac{35}{45}$

$\Rightarrow \mathbf{\frac{14}{18},\frac{21}{27},\frac{28}{36},\frac{35}{45}}$

(g) $\frac{4}{7}\times\frac{2}{2}=\frac{8}{14},\frac{4}{7}\times\frac{3}{3}=\frac{12}{21},\frac{4}{7}\times\frac{4}{4}=\frac{16}{28},\frac{4}{7}\times\frac{5}{5}=\frac{20}{35}$

$\Rightarrow \mathbf{\frac{8}{14},\frac{12}{21},\frac{16}{28},\frac{20}{35}}$

(h) $\frac{4}{5}\times\frac{2}{2}=\frac{8}{10},\frac{4}{5}\times\frac{3}{3}=\frac{12}{15},\frac{4}{5}\times\frac{4}{4}=\frac{16}{20},\frac{4}{5}\times\frac{5}{5}=\frac{20}{25}$

$\Rightarrow \mathbf{\frac{8}{10},\frac{12}{15},\frac{16}{20},\frac{20}{25}}$

(i) $\frac{6}{10}\times\frac{2}{2}=\frac{12}{20},\frac{6}{10}\times\frac{3}{3}=\frac{18}{30},\frac{6}{10}\times\frac{4}{4}=\frac{24}{40},\frac{6}{10}\times\frac{5}{5}=\frac{30}{50}$

$\Rightarrow \mathbf{\frac{12}{20},\frac{18}{30},\frac{24}{40},\frac{30}{50}}$

(j) $\frac{6}{7}\times\frac{2}{2}=\frac{12}{14},\frac{6}{7}\times\frac{3}{3}=\frac{18}{21},\frac{6}{7}\times\frac{4}{4}=\frac{24}{28},\frac{6}{7}\times\frac{5}{5}=\frac{30}{35}$

$\Rightarrow \mathbf{\frac{12}{14},\frac{18}{21},\frac{24}{28},\frac{30}{35}}$

(k) $\frac{5}{7}\times\frac{2}{2}=\frac{10}{14},\frac{5}{7}\times\frac{3}{3}=\frac{15}{21},\frac{5}{7}\times\frac{4}{4}=\frac{20}{28},\frac{5}{7}\times\frac{5}{5}=\frac{25}{35}$

$\Rightarrow \mathbf{\frac{10}{14},\frac{15}{21},\frac{20}{28},\frac{25}{35}}$

(l) $\frac{7}{8}\times\frac{2}{2}=\frac{14}{16},\frac{7}{8}\times\frac{3}{3}=\frac{21}{24},\frac{7}{8}\times\frac{4}{4}=\frac{28}{32},\frac{7}{8}\times\frac{5}{5}=\frac{35}{40}$

$\Rightarrow \mathbf{\frac{14}{16},\frac{21}{24},\frac{28}{32},\frac{35}{40}}$

2. (a) 16; (b) 30; (c) 42; (d) 16; (e) 64

3. (a) 9; (b) 15; (c) 18; (d) 24; (e) 4

4. (a) 6; (b) 5; (c) 12; (d) 13; (e) 5

5. (a) 3; (b) 4; (c) 2; (d) 3; (e) 3

6. (a), (b), (d), (f) and (h).

7. (a) $\frac{1}{2}\times\frac{12}{12}=\frac{12}{24}$; (b) $\frac{1}{3}\times\frac{8}{8}=\frac{8}{24}$; (c) $\frac{5}{6}\times\frac{4}{4}=\frac{20}{24}$;
(d) $\frac{7}{8}\times\frac{3}{3}=\frac{21}{24}$; (e) $\frac{9}{12}\times\frac{2}{2}=\frac{18}{24}$

8. (a) $\frac{2}{3}\times\frac{6}{6}=\frac{12}{18}$; (b) $\frac{5}{9}\times\frac{2}{2}=\frac{10}{18}$; (c) $\frac{5}{6}\times\frac{3}{3}=\frac{15}{18}$;
(d) $\frac{4}{12}\times\frac{5}{5}=\frac{20}{60}$; (e) $\frac{3}{7}\times\frac{2}{2}=\frac{6}{14}$

Let Us Do-8C

1. Not; **2.** Not; **3.** Yes; **4.** Yes; **5.** Yes; **6.** Yes; **7.** Not; **8.** Not; **9.** Yes; **10.** Yes; **11.** Yes; **12.** Yes

13. $\frac{14}{21}\div\frac{7}{7}=\frac{2}{3}$ **14.** $\frac{8}{28}\div\frac{4}{4}=\frac{2}{7}$ **15.** $\frac{30}{42}\div\frac{6}{6}=\frac{5}{7}$

16. $\frac{9}{24}\div\frac{3}{3}=\frac{3}{8}$ **17.** $\frac{45}{75}\div\frac{15}{15}=\frac{3}{5}$ **18.** $\frac{21}{72}\div\frac{3}{3}=\frac{7}{24}$

19. $\frac{51}{68}\div\frac{17}{17}=\frac{3}{4}$ **20.** $\frac{56}{7}\div\frac{7}{7}=\frac{8}{1}$ **21.** $\frac{12}{15}\div\frac{3}{3}=\frac{4}{5}$

22. $\frac{48}{72}\div\frac{24}{24}=\frac{2}{3}$ **23.** $\frac{65}{169}\div\frac{13}{13}=\frac{5}{13}$ **24.** $\frac{64}{80}\div\frac{16}{16}=\frac{4}{5}$

Let Us Do-8D

1. (a), (c), (e) and (f) are like fractions, (b) and (d) are unlike fractions.

2. (a) no; (b) no; (c) Yes; (d) Yes; (e) Yes; (f) no; (g) no; (h) Yes.

3. Proper fractions = (a), (b), (g), (k), (n) and (o).

Improper fractions = (c), (d), (e), (f), (h), (i), (j), (l), (m) and (p).

4. (a) $\frac{15}{4}$. Dividing 15 by 4.

We get quotient $= 3$
and remainder $= 3$
$\therefore \frac{15}{4} = 3 + \frac{3}{4} = 3\frac{3}{4}$

(b) $\frac{27}{7}$. Dividing 27 by 7

We get quotient $= 3$
and remainder $= 6$
$\therefore \frac{27}{7} = 3 + \frac{6}{7} = 3\frac{6}{7}$

(c) $\frac{32}{5}$. Dividing 32 by 5

We get quotient $= 6$
and remainder $= 2$
$\therefore \frac{32}{5} = 6 + \frac{2}{5} = 6\frac{2}{5}$

(d) $\frac{45}{8}$. Dividing 45 by 8

We get quotient $= 5$
and remainder $= 5$
$\therefore \frac{45}{8} = 5 + \frac{5}{8} = 5\frac{5}{8}$

(e) $\frac{25}{4}$. Dividing 25 by 4

We get quotient $= 6$
and remainder $= 1$
$\therefore \frac{25}{4} = 6 + \frac{1}{4} = 6\frac{1}{4}$

(f) $\frac{17}{7}$. Dividing 17 by 7

We get quotient $= 2$
and remainder $= 3$
$\therefore \frac{17}{7} = 2 + \frac{3}{7} = 2\frac{3}{7}$

(g) $\frac{51}{5}$. Dividing 51 by 5

We get quotient $= 10$
and remainder $= 1$
$\therefore \frac{51}{5} = 10 + \frac{1}{5} = 10\frac{1}{5}$

(h) $\frac{85}{13}$. Dividing 85 by 13

We get quotient $= 6$
and remainder $= 7$
$\therefore \frac{85}{13} = 6 + \frac{7}{13} = 6\frac{7}{13}$

(i) $\frac{95}{17}$. Dividing 95 by 17

We get quotient $= 5$
and remainder $= 10$
$\therefore \frac{95}{17} = 5 + \frac{10}{17} = 5\frac{10}{17}$

(j) $\frac{111}{25}$. Dividing 111 by 25

We get quotient $= 4$
and remainder $= 11$
$\therefore \frac{111}{25} = 4 + \frac{11}{25} = 4\frac{11}{25}$

(k) $\frac{125}{23}$. Dividing 125 by 23

We get quotient $= 5$
and remainder $= 10$
$\therefore \frac{125}{23} = 5 + \frac{10}{23} = 5\frac{10}{23}$

(l) $\frac{111}{10}$. Dividing 111 by 10

We get quotient $= 11$
and remainder $= 1$
$\therefore \frac{111}{10} = 11 + \frac{1}{10} = 11\frac{1}{10}$

(m) $\frac{95}{7}$. Dividing 95 by 7

We get quotient $=13$
and remainder $=4$

$\therefore \frac{95}{7}=13+\frac{4}{7}=13\frac{4}{7}$

(n) $\frac{125}{8}$. Dividing 125 by 8

We get quotient $=15$
and remainder $=5$

$\therefore \frac{125}{8}=15+\frac{45}{8}=15\frac{5}{8}$

5. (a) $2\frac{1}{3}=\frac{2\times3+1}{3}=\frac{6+1}{3}=\frac{7}{3}$

(b) $7\frac{3}{8}=\frac{7\times8+3}{8}=\frac{56+3}{8}=\frac{59}{8}$

(c) $6\frac{2}{5}=\frac{6\times5+2}{5}=\frac{30+2}{5}=\frac{32}{5}$

(d) $9\frac{7}{11}=\frac{9\times11+7}{11}=\frac{99+7}{11}=\frac{106}{11}$

(e) $19\frac{4}{5}=\frac{19\times5+4}{5}=\frac{95+4}{5}=\frac{99}{5}$

(f) $6\frac{5}{8}=\frac{6\times8+5}{8}=\frac{48+5}{8}=\frac{53}{8}$

(g) $15\frac{6}{7}=\frac{15\times7+6}{7}=\frac{105+6}{7}=\frac{111}{7}$

(h) $19\frac{2}{9}=\frac{19\times9+2}{9}=\frac{171+2}{9}=\frac{173}{9}$

(i) $9\frac{16}{19}=\frac{9\times19+16}{19}=\frac{171+16}{19}=\frac{187}{19}$

(j) $9\frac{15}{16}=\frac{9\times16+15}{16}=\frac{144+15}{16}=\frac{159}{16}$

(k) $14\frac{3}{7}=\frac{14\times7+3}{7}=\frac{98+3}{7}=\frac{101}{7}$

(l) $11\frac{6}{9}=\frac{11\times9+6}{9}=\frac{99+6}{9}=\frac{105}{9}$

(m) $18\frac{2}{7}=\frac{18\times7+2}{7}=\frac{126+2}{7}=\frac{128}{7}$

(n) $12\frac{19}{20}=\frac{12\times20+19}{20}=\frac{240+19}{20}=\frac{259}{20}$

(o) $15\frac{5}{22}=\frac{15\times22+5}{22}=\frac{330+5}{22}=\frac{335}{22}$

(p) $24\frac{12}{25}=\frac{24\times25+12}{25}=\frac{600+12}{25}=\frac{612}{25}$

(q) $125\frac{5}{6}=\frac{125\times6+5}{6}=\frac{750+5}{6}=\frac{755}{6}$

(r) $32\frac{5}{16}=\frac{32\times16+5}{16}=\frac{512+5}{16}=\frac{517}{16}$

(s) $9\frac{16}{21}=\frac{9\times21+16}{21}=\frac{189+16}{21}=\frac{205}{21}$

(t) $105\frac{6}{7}=\frac{105\times7+6}{7}=\frac{735+6}{7}=\frac{741}{7}$

(u) $112\frac{5}{9}=\frac{112\times9+5}{9}=\frac{1008+5}{9}=\frac{1013}{9}$

6. $\frac{1}{7},\frac{3}{7},\frac{5}{7},\frac{6}{7}$, They are proper fractions.

7. $\frac{11}{9},\frac{13}{9},\frac{15}{9},\frac{17}{9}$, They are improper fractions.

8. $\frac{16}{8},\frac{24}{12},\frac{10}{5},\frac{20}{10}$ **9.** $\frac{24}{8},\frac{15}{5},\frac{21}{7},\frac{27}{9}$

10. (a) $\frac{7}{5}$; (b) $\frac{9}{2}$; (c) $\frac{13}{11}$; (d) $\frac{7}{19}$; (e) $\frac{3}{25}$; (f) $\frac{19}{8}$; (g) $\frac{44}{9}$

Let Us Do-8(E)

1. < ; **2.** <; **3.** >; **4.** >; **5.** <; **6.** >; **7.** <; **8.** >; **9.** >; **10.** >; **11.** >; **12.** <; **13.** >; **14.** >; **15.** >; **16.** <; **17.** >;

18. >; **19.** >; **20.** >; **21.** <; **22.** >; **23.** <; **24.** >; **25.** <; **26.** >; **27.** <;

28. >;

29. (a) $\frac{3}{9},\frac{5}{9}$

The denominator of the two fractions are same.
We compare their numerator.
The fraction with greater numerator is greater than the other.

$\therefore \quad 3<5 \Rightarrow \frac{3}{9}<\frac{5}{9}$

(b) $\frac{5}{13},\frac{19}{13}$

Here, $\frac{5}{13}$ and $\frac{19}{13}$ have the same denominator 13

Also $5 < 19$

Therefore $\frac{5}{13} < \frac{19}{13}$

(c) $\frac{8}{16}, \frac{11}{16}$

Here, $\frac{8}{16}$ and $\frac{11}{16}$ have the same denominator 16

Also $8 < 11$, therefore $\frac{8}{16} < \frac{11}{16}$

(d) $\frac{13}{17}, \frac{7}{17}$

Here, $\frac{13}{17}$ and $\frac{7}{17}$ have the same denominator 17

Also $7 < 13$, therefore $\frac{7}{17} < \frac{13}{17}$

(e) $\frac{5}{8}, \frac{5}{18}$

Here, $\frac{5}{8}$ and $\frac{5}{18}$ have the same numerator 5

We compare their denominators.

The fraction with smaller denominator is greater than the other.

Here, $8 < 18$, therefore $\frac{5}{8} > \frac{5}{18}$

(f) $\frac{15}{21}, \frac{15}{25}$

Here, $\frac{15}{21}$ and $\frac{15}{25}$ have the same numerator 15

Also $21 < 25$, therefore $\frac{15}{21} > \frac{15}{25}$

(g) $\frac{6}{13}, \frac{7}{13}$

Here, $\frac{6}{13}$ and $\frac{7}{13}$ have the same denominator 13

Also $6 < 7$, therefore $\frac{6}{13} < \frac{7}{13}$

(h) $\frac{9}{21}, \frac{9}{17}$

Here, $\frac{9}{21}$ and $\frac{9}{17}$ have the same numerator 9

Also $17 < 21$, so, $\frac{9}{21} < \frac{9}{17}$

30. (a) $\frac{5}{10}, \frac{7}{10}$

Here, $\frac{5}{10}$ and $\frac{7}{10}$ have the same denominator 10

Since $7 > 4$, so, $\frac{7}{10} > \frac{5}{10}$

Hence, $\frac{7}{10}$ is greater than $\frac{5}{10}$.

(b) $\frac{7}{15}, \frac{7}{18}$

Here, $\frac{7}{15}$ and $\frac{7}{18}$ have the same numerator 7

Since $18 > 15$, so, $\frac{7}{15} > \frac{7}{18}$

Hence, $\frac{7}{15}$ is greater than $\frac{7}{18}$

(c) $\frac{1}{8}, \frac{1}{10}$

Here, $\frac{1}{8}$ and $\frac{1}{10}$ have the same numerator 1

Since $10 > 8$, so, $\frac{1}{8} > \frac{1}{10}$

Hence, $\frac{1}{8}$ is greater than $\frac{1}{10}$.

(d) $\frac{19}{27}, \frac{12}{27}$

Here, $\frac{19}{27}$ and $\frac{12}{27}$ have the same denominator 27

Since $19 > 12$, so, $\frac{19}{27} > \frac{12}{27}$

Hence, $\frac{19}{27}$ is greater than $\frac{12}{27}$.

(e) $\frac{13}{15}, \frac{9}{15}$

Here, $\frac{13}{15}$ and $\frac{9}{15}$ have the same denominator 15

Since 13 > 9, so, $\frac{13}{15} > \frac{9}{15}$

Hence, $\frac{13}{15}$ is greater than $\frac{9}{15}$

(f) $\frac{4}{8}, \frac{4}{10}$

Here, $\frac{4}{8}$ and $\frac{4}{10}$ have the same numerator 4

Since 10 > 8, so, $\frac{4}{8} < \frac{4}{10}$

Hence, $\frac{4}{10}$ is greater than $\frac{4}{8}$.

(g) $\frac{4}{9}, \frac{4}{7}$

Here, $\frac{4}{9}$ and $\frac{4}{7}$ have the same numerator 4

Since 9 > 7, so, $\frac{4}{7} > \frac{4}{9}$

Hence, $\frac{4}{7}$ is greater than $\frac{4}{9}$.

(h) $\frac{4}{23}, \frac{14}{23}$

Here, $\frac{4}{23}$ and $\frac{14}{23}$ have the same denominator 23

Since 4 < 14, so, $\frac{4}{23} < \frac{14}{23}$

Hence, $\frac{14}{23}$ is greater than $\frac{4}{23}$.

31. $\frac{1}{7}, \frac{5}{7}, \frac{3}{7}, \frac{2}{7}$

Here, all the denominators are same.

We know that, greater the numerator greater is the fraction

$\therefore \quad \frac{1}{7} < \frac{2}{7} < \frac{3}{7} < \frac{5}{7}$

32. $\frac{4}{13}, \frac{8}{13}, \frac{2}{13}, \frac{6}{13}, \frac{1}{13}$

Here, all the denominators are same.

We know that, greater the numerator greater is the fraction

$\therefore \quad \frac{1}{13} < \frac{2}{13} < \frac{4}{13} < \frac{6}{13} < \frac{8}{13}$

33. $\frac{9}{25}, \frac{13}{25}, \frac{16}{25}, \frac{5}{25}, \frac{10}{25}$

Here, all the denominators are same.

We know that, greater the numerator greater is the fraction.

$\therefore \quad \frac{5}{25} < \frac{9}{25} < \frac{10}{25} < \frac{13}{25} < \frac{16}{25}$

34. $\frac{2}{3}, \frac{2}{9}, \frac{2}{11}, \frac{2}{5}, \frac{2}{15}$

Here, all the numerator are same.

We know that, greater the denominators smaller is the fraction.

$\therefore \quad \frac{2}{15} < \frac{2}{11} < \frac{2}{9} < \frac{2}{5} < \frac{2}{3}$

35. $\frac{1}{14}, \frac{5}{14}, \frac{9}{14}, \frac{11}{14}, \frac{13}{14}$

Here, all the denominators are same.

We know that, greater the numerator greater is the fraction.

$\therefore \quad \frac{1}{14} < \frac{5}{14} < \frac{9}{14} < \frac{11}{14} < \frac{13}{14}$

36. $\frac{13}{27}, \frac{12}{27}, \frac{25}{27}, \frac{14}{27}, \frac{16}{27}$

Here, all the denominators are same.

We know that, greater the numerator greater is the fraction.

$\therefore \quad \frac{12}{27} < \frac{13}{27} < \frac{14}{27} < \frac{16}{27} < \frac{25}{27}$

37. $\frac{5}{9}, \frac{5}{6}, \frac{5}{11}, \frac{5}{8}, \frac{5}{12}$

Here, all the numerators are same.

We know that, greater the denominators smaller is the fraction

$\therefore \quad \frac{5}{12} < \frac{5}{11} < \frac{5}{9} < \frac{5}{8} < \frac{5}{6}$

38. $\frac{1}{9}, \frac{4}{9}, \frac{8}{9}, \frac{7}{9}, \frac{6}{9}$

Here, all the denominators are same.

We know that, greater the numerator greater is the fraction

$\therefore \quad \frac{1}{9} < \frac{4}{9} < \frac{6}{9} < \frac{7}{9} < \frac{8}{9}$

39. $\frac{5}{8}, \frac{5}{11}, \frac{5}{7}, \frac{5}{9}, \frac{5}{13}$

Here, all the numerators are same.

We know that, greater the denominators smaller is the fraction

$\therefore \quad \frac{5}{13} < \frac{5}{11} < \frac{5}{9} < \frac{5}{8} < \frac{5}{7}$

40. $\frac{1}{5}, \frac{4}{5}, \frac{2}{5}, \frac{3}{5}$

The given fractions have the same denominator 5

The fraction with greater numerator is greater than the other.

Since $4 > 3 > 2 > 1$ So, $\frac{4}{5} > \frac{3}{5} > \frac{2}{5} > \frac{1}{5}$

41. $\frac{9}{21}, \frac{11}{21}, \frac{15}{21}, \frac{23}{21}, \frac{7}{21}$

Since, $23 > 15 > 11 > 9 > 7$

So, $\frac{23}{21} > \frac{15}{21} > \frac{11}{21} > \frac{9}{21} > \frac{7}{21}$

42. $\frac{7}{13}, \frac{5}{13}, \frac{11}{13}, \frac{3}{13}, \frac{9}{13}$

Since $11 > 9 > 7 > 5 > 3$

So, $\frac{11}{13} > \frac{9}{13} > \frac{7}{13} > \frac{5}{13} > \frac{3}{13}$

43. $\frac{11}{55}, \frac{27}{55}, \frac{10}{55}, \frac{39}{55}, \frac{47}{55}$

Since, $47 > 39 > 27 > 11 > 10$

So, $\frac{47}{55} > \frac{39}{55} > \frac{27}{55} > \frac{11}{55} > \frac{10}{55}$

44. $\frac{11}{25}, \frac{11}{27}, \frac{11}{13}, \frac{11}{19}, \frac{11}{12}$

Here, all the numerators are same.

Since $12 < 13 < 19 < 25 < 27$

So, $\frac{11}{12} > \frac{11}{13} > \frac{11}{19} > \frac{11}{25} > \frac{11}{27}$

45. $\frac{7}{23}, \frac{5}{23}, \frac{11}{23}, \frac{9}{23}, \frac{3}{23}$

Since $11 > 9 > 7 > 5 > 3$

So, $\frac{11}{23} > \frac{9}{23} > \frac{7}{23} > \frac{5}{23} > \frac{3}{23}$

46. $\frac{3}{4}, \frac{3}{7}, \frac{3}{11}, \frac{3}{13}, \frac{3}{5}, \frac{3}{17}$

The greatest fraction is $\frac{3}{4}$

47. $\frac{6}{8}, \frac{6}{11}, \frac{6}{9}, \frac{6}{13}, \frac{6}{15}, \frac{6}{19}, \frac{6}{23}$

The greatest fraction is $\frac{6}{8}$

48. $\frac{7}{11}, \frac{7}{9}, \frac{7}{13}, \frac{7}{15}, \frac{7}{6}, \frac{7}{21}$

The greatest fraction is $\frac{7}{6}$

49. $\frac{9}{9}, \frac{9}{11}, \frac{9}{25}, \frac{9}{8}, \frac{9}{21}, \frac{9}{17}, \frac{9}{27}$

The greatest fraction is $\frac{9}{8}$

Let Us Do-8F

1. (a) $\frac{4}{9}, \frac{5}{6}$

First find the LCM of 9 and 6

$\text{LCM} = 2 \times 3 \times 3 = 18$ $\Rightarrow$

2	9, 6
3	9, 3
3	3, 1
	1, 1

$\frac{4}{9} = \frac{4 \times 2}{9 \times 2} = \frac{8}{18}$, $\frac{5}{6} = \frac{5 \times 3}{6 \times 3} = \frac{15}{18}$

Here, $\frac{15}{18} > \frac{8}{18}$ or $\frac{5}{6} > \frac{4}{9}$

(b) $\frac{5}{8}, \frac{4}{7}$

LCM of 8 and 7 $\Rightarrow$

$\text{LCM} = 8 \times 7 = 56$

2	8, 7
2	4, 7
2	2, 7
7	1, 7
	1, 1

$\frac{5 \times 7}{8 \times 7} = \frac{35}{56}$, $\frac{4 \times 8}{7 \times 8} = \frac{32}{56}$

Here $35 > 32$, $\therefore$ $\frac{35}{56} > \frac{32}{56}$ or $\frac{5}{8} > \frac{4}{7}$

(c) $\frac{1}{2}, \frac{3}{5}$

LCM of 2 and 5 $\Rightarrow$

$\text{LCM} = 2 \times 5 = 10$

$\therefore \quad \frac{1 \times 5}{2 \times 5} = \frac{5}{10}, \frac{3 \times 2}{5 \times 2} = \frac{6}{10}$

Here, 6 > 5

$\therefore \quad \frac{6}{10} > \frac{5}{10}$ or $\frac{3}{5} > \frac{1}{2}$

2	2, 5
5	1, 5
	1, 1

(d) $\frac{17}{20}, \frac{11}{18}$

LCM of 20 and 18 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 \times 3 \times 5 = 180$

$\therefore \frac{17 \times 9}{20 \times 9} = \frac{153}{180}, \frac{11 \times 10}{18 \times 10} = \frac{110}{180}$

Here, 153 > 110 , $\frac{153}{180} > \frac{110}{180}$ or $\frac{17}{20} > \frac{11}{18}$

2	20, 18
2	10, 9
3	5, 9
3	5, 3
5	5, 1
	1, 1

(e) $\frac{13}{21}, \frac{7}{12}$

LCM of 21 and 12 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 \times 7 = 84$

$\frac{13 \times 4}{21 \times 4} = \frac{52}{84}, \frac{7 \times 7}{12 \times 7} = \frac{49}{84}$

Here, $52 > 49$

$\therefore \quad \frac{52}{84} > \frac{49}{84}$ or $\frac{13}{21} > \frac{7}{12}$

2	21, 12
2	21, 6
3	21, 3
7	7, 1
	1, 1

(f) $\frac{9}{16}, \frac{3}{10}$

LCM of 16 and 10 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 5 = 80$

$\frac{9 \times 5}{16 \times 5} = \frac{45}{80}, \frac{3 \times 8}{10 \times 8} = \frac{24}{80}$

Here, $45 > 24$

$\therefore \frac{45}{80} > \frac{24}{80}$ or $\frac{9}{16} > \frac{3}{10}$

2	16, 10
2	8, 5
2	4, 5
2	2, 5
5	1, 5
	1, 1

(g) $2\frac{1}{6}, 2\frac{1}{5} = \frac{13}{6}, \frac{11}{5}$

LCM of 6 and 5 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 5 = 30$

$\frac{13 \times 5}{6 \times 5} = \frac{65}{30}, \frac{11 \times 6}{5 \times 6} = \frac{66}{30}$

Here, 66 > 65 ,

$\frac{66}{30} > \frac{65}{30}$ or $2\frac{1}{5} > 2\frac{1}{6}$

2	6, 5
3	3, 5
5	1, 5
	1, 1

(h) $2\frac{2}{5}, \frac{17}{9} = \frac{12}{5}, \frac{17}{9}$

LCM of 5 and 9 $\Rightarrow$

$\text{LCM} = 3 \times 3 \times 5 = 45$

$\frac{12 \times 9}{5 \times 9} = \frac{108}{45}, \frac{17 \times 5}{9 \times 5} = \frac{85}{45}$

Here, 108 > 85

$\therefore \quad \frac{108}{45} > \frac{85}{45}$ or $2\frac{2}{5} > \frac{17}{9}$

3	5, 9
3	5, 3
5	5, 1
	1, 1

(i) $\frac{13}{6}, \frac{9}{4}$

LCM of 6 and 4 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 = 12$

$\frac{13 \times 2}{6 \times 2} = \frac{26}{12}, \frac{9 \times 3}{4 \times 3} = \frac{27}{12}$

Here, 27 > 26

$\therefore \quad \frac{27}{12} > \frac{26}{12}$ or $\frac{9}{4} > \frac{13}{6}$

2	6, 4
2	3, 2
3	3, 1
	1, 1

(j) $\frac{5}{8}, \frac{6}{7}$

LCM of 8 and 7 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 2 \times 7 = 56$

$\frac{5 \times 7}{8 \times 7} = \frac{35}{56}, \frac{6 \times 8}{7 \times 8} = \frac{48}{56}$

Here, 48 > 35

$\therefore \quad \frac{48}{56} > \frac{35}{56}$ or $\frac{6}{7} > \frac{5}{8}$

2	8, 7
2	4, 7
2	2, 7
7	1, 7
	1, 1

2. (a) $\frac{3}{5}, \frac{1}{2}, \frac{7}{10}$

2	2, 5, 10
5	1, 5, 5
	1, 1, 1

LCM of 5, 2, 10 $\Rightarrow$

$\text{LCM} = 2 \times 5 = 10$

$\frac{3 \times 2}{5 \times 2} = \frac{6}{10}, \frac{1 \times 5}{2 \times 5} = \frac{5}{10}, \frac{7 \times 1}{10 \times 1} = \frac{7}{10}$

Here, $5 < 6 < 7$,

$\frac{5}{10} < \frac{6}{10} < \frac{7}{10}$ or $\frac{1}{2} < \frac{3}{5} < \frac{7}{10}$

Smallest fraction $= \frac{1}{2}$

largest $= \frac{7}{10}$

(b) $\frac{3}{4}, \frac{4}{5}, \frac{6}{7}$

4	4, 5, 7
5	1, 5, 7
7	1, 1, 7
	1, 1, 1

LCM of 4, 5, 7 $\Rightarrow$

$\text{LCM} = 4 \times 5 \times 7 = 140$

$\frac{3 \times 35}{4 \times 35} = \frac{105}{140}, \frac{4 \times 28}{5 \times 28} = \frac{112}{140}, \frac{6 \times 20}{7 \times 20} = \frac{120}{140}$

Here, $105 < 112 < 120$,

$\frac{105}{140} < \frac{112}{140} < \frac{120}{140}$ or $\frac{3}{4} < \frac{4}{5} < \frac{6}{7}$

Smallest fraction $= \frac{3}{4}$, largest fraction $= \frac{6}{7}$

(c) $\frac{2}{3}, \frac{5}{6}, \frac{1}{9}$

2	3, 6, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

LCM of 3, 6, 9 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 3 = 18$

$\frac{2 \times 6}{3 \times 6} = \frac{12}{18}, \frac{5 \times 3}{6 \times 3} = \frac{15}{18}, \frac{1 \times 2}{9 \times 2} = \frac{2}{18}$

Here, $2 < 12 < 15$

$\therefore \quad \frac{2}{18} < \frac{12}{18} < \frac{15}{18}$ or $\frac{1}{9} < \frac{2}{3} < \frac{5}{6}$

Smallest $= \frac{1}{9}$, largest $= \frac{5}{6}$

(d) $\frac{5}{7}, \frac{10}{21}, \frac{3}{14}$

2	7, 21, 14
3	7, 21, 7
7	7, 7, 7
	1, 1, 1

LCM of 7, 21 and 14 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 7 = 42$

$\frac{5 \times 6}{7 \times 6} = \frac{30}{42}, \frac{10 \times 2}{21 \times 2} = \frac{20}{42}, \frac{3 \times 3}{14 \times 3} = \frac{9}{42}$

Here, $9 < 20 < 30$

$\therefore \frac{9}{42} < \frac{20}{42} < \frac{30}{42}$ or $\frac{3}{14} < \frac{10}{21} < \frac{5}{7}$

$\text{Smallest} = \frac{3}{14}, \text{ largest} = \frac{5}{7}$

(e) $\frac{3}{8}, \frac{5}{12}, \frac{5}{6}$

2	8, 12, 6
2	4, 6, 3
2	2, 3, 3
3	1, 3, 3
	1, 1, 1

LCM of 8, 12 and 6 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 2 \times 3 = 24$

$\frac{3 \times 3}{8 \times 3} = \frac{9}{24}, \frac{5 \times 2}{12 \times 2} = \frac{10}{24}, \frac{5 \times 4}{6 \times 4} = \frac{20}{24}$

Here, $9 < 10 < 20$

$\therefore \frac{9}{24} < \frac{10}{24} < \frac{20}{24}$ or $\frac{3}{8} < \frac{5}{12} < \frac{5}{6}$

$\text{Smallest} = \frac{3}{8}, \text{ largest} = \frac{5}{6}$

(f) $\frac{5}{9}, \frac{6}{12}, \frac{5}{6}$

2	9, 12, 6
2	9, 6, 3
3	9, 3, 3
3	3, 1, 1
	1, 1, 1

LCM of 9, 12 and 6 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 \times 3 = 36$

$\frac{5 \times 4}{9 \times 4} = \frac{20}{36}, \frac{6 \times 3}{12 \times 3} = \frac{18}{36}, \frac{5 \times 6}{6 \times 6} = \frac{30}{36}$

Here, $18 < 20 < 30$

$\therefore \frac{18}{36} < \frac{20}{36} < \frac{30}{36}$ or $\frac{6}{12} < \frac{5}{9} < \frac{5}{6}$

$\text{Smallest} = \frac{6}{12}, \text{ largest} = \frac{5}{6}$

(g) $\frac{5}{12}, \frac{7}{15}, \frac{8}{10}$

2	12, 15, 10
2	6, 15, 5
3	3, 15, 5
5	1, 5, 5
	1, 1, 1

LCM of 12, 15 and 10 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 \times 5 = 60$

$\frac{5 \times 5}{12 \times 5} = \frac{25}{60}, \frac{7 \times 4}{15 \times 4} = \frac{28}{60}, \frac{8 \times 6}{10 \times 6} = \frac{48}{60}$

Here $25 < 28 < 48$

$\therefore \quad \frac{25}{60} < \frac{28}{60} < \frac{48}{60}$ or $\frac{5}{12} < \frac{7}{15} < \frac{8}{10}$

Smallest $= \frac{5}{12}$, largest $= \frac{8}{10}$

(h) $\frac{3}{4}, \frac{1}{2}, \frac{7}{8}$

2	4, 2, 8
2	2, 1, 4
2	1, 1, 2
	1, 1, 1

LCM of 4, 2 and 8 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 2 = 8$

$\frac{3 \times 2}{4 \times 2} = \frac{6}{8}, \frac{1 \times 4}{2 \times 4} = \frac{4}{8}, \frac{7 \times 1}{8 \times 1} = \frac{7}{8}$

Here $4 < 6 < 7$

$\therefore \frac{4}{8} < \frac{6}{8} < \frac{7}{8}$ or $\frac{1}{2} < \frac{3}{4} < \frac{7}{8}$

Smallest $= \frac{1}{2}$, largest $= \frac{7}{8}$

(i) $\frac{2}{3}, \frac{5}{7}, \frac{3}{4}$

2	3, 7, 4
2	3, 7, 2
3	3, 7, 1
7	1, 7, 1
	1, 1, 1

LCM of 3, 7 and 4 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 \times 7 = 84$

$\frac{2 \times 28}{3 \times 28} = \frac{56}{84},$

$\frac{5 \times 12}{7 \times 12} = \frac{60}{84}, \frac{3 \times 21}{4 \times 21} = \frac{63}{84}$

Here, $56 < 60 < 63$

$\therefore \quad \frac{56}{84} < \frac{60}{84} < \frac{63}{84}$ or $\frac{2}{3} < \frac{5}{7} < \frac{3}{4}$

Smallest $= \frac{2}{3}$, largest $= \frac{3}{4}$

(j) $\frac{4}{5}, \frac{3}{7}, \frac{3}{4}$

LCM of 5, 7 and 4 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 5 \times 7 = 140$

$\frac{4 \times 28}{5 \times 28} = \frac{112}{140}, \frac{3 \times 20}{7 \times 20} = \frac{60}{140}, \frac{3 \times 35}{4 \times 35} = \frac{105}{140}$

2	5, 7, 4
2	5, 7, 2
5	5, 7, 1
7	1, 7, 1
	1, 1, 1

Here $60 < 105 < 112$

$\therefore \frac{60}{140} < \frac{105}{140} < \frac{112}{140}$ or $\frac{3}{7} < \frac{3}{4} < \frac{4}{5}$

Smallest $= \frac{3}{7}$, largest $= \frac{4}{5}$

(k) $\frac{3}{5}, \frac{5}{10}, \frac{7}{25}$ LCM of 5, 10, 25 $\Rightarrow$

2	5, 10, 25
5	5, 5, 25
5	1, 1, 5
	1, 1, 1

$\text{LCM} = 2 \times 5 \times 5 = 50$

$\frac{3 \times 10}{5 \times 10} = \frac{30}{50}, \frac{5 \times 5}{10 \times 5} = \frac{25}{50}, \frac{7 \times 2}{25 \times 2} = \frac{14}{50}$

Here $14 < 25 < 30$

$\therefore \frac{14}{50} < \frac{25}{50} < \frac{30}{50}$ or $\frac{7}{25} < \frac{5}{10} < \frac{3}{5}$

Smallest $= \frac{7}{25}$, largest $= \frac{3}{5}$

(l) $\frac{1}{4}, \frac{7}{8}, \frac{5}{12}$ LCM of 4, 8, 12 $\Rightarrow$

2	4, 8, 12
2	2, 4, 6
2	1, 2, 3
3	1, 1, 3
	1, 1, 1

$\text{LCM} = 2 \times 2 \times 2 \times 3 = 24$

$\frac{1 \times 6}{4 \times 6} = \frac{6}{24}, \frac{7 \times 3}{8 \times 3} = \frac{21}{24}, \frac{5 \times 2}{12 \times 2} = \frac{10}{24}$

Here , $6 < 10 < 21$,

$\therefore \frac{6}{24} < \frac{10}{24} < \frac{21}{24}$ or $\frac{1}{4} < \frac{5}{12} < \frac{7}{8}$

Smallest $= \frac{1}{4}$, largest $= \frac{7}{8}$

3. (a) $\frac{2}{3}, \frac{5}{6}, \frac{3}{9}$

LCM of 3, 6 and 9 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 3 = 18$

2	3, 6, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

$\frac{2\times6}{3\times6}=\frac{12}{18}, \frac{5\times3}{6\times3}=\frac{15}{18}, \frac{3\times2}{9\times2}=\frac{6}{18}$

Here, $6 < 12 < 15$

$\therefore \quad \frac{6}{18}<\frac{12}{18}<\frac{15}{18}$ or $\frac{3}{9}<\frac{2}{3}<\frac{5}{6}$

(b) $\frac{5}{8}, \frac{7}{12}, \frac{3}{4}$

2	8, 12, 4
2	4, 6, 2
2	2, 3, 1
3	1, 3, 1
	1, 1, 1

LCM of 8, 12 and 4 $\Rightarrow$

$\text{LCM} = 2\times2\times2\times3=24$

$\frac{5\times3}{8\times3}=\frac{15}{24}, \frac{7\times2}{12\times2}=\frac{14}{24}, \frac{3\times6}{4\times6}=\frac{18}{24}$

Here, $14 < 15 < 18$

$\therefore \quad \frac{14}{24}<\frac{15}{24}<\frac{18}{24}$ or $\frac{7}{12}<\frac{5}{8}<\frac{3}{4}$

(c) $\frac{2}{9}, \frac{4}{6}, \frac{3}{4}$

2	9, 6, 4
2	9, 3, 2
3	9, 3, 1
3	3, 1, 1
	1, 1, 1

LCM of 9, 6 and 4 $\Rightarrow$

$\text{LCM} = 2\times2\times3\times3=36$

$\frac{2\times4}{9\times4}=\frac{8}{36}, \frac{4\times6}{6\times6}=\frac{24}{36}, \frac{3\times9}{4\times9}=\frac{27}{36}$

Here, $8 < 24 < 27$

$\therefore \quad \frac{8}{36}<\frac{24}{36}<\frac{27}{36}$ or $\frac{2}{9}<\frac{4}{6}<\frac{3}{4}$

(d) $\frac{3}{16}, \frac{1}{8}, \frac{9}{32}$

2	16, 8, 32
2	8, 4, 16
2	4, 2, 8
2	2, 1, 4
2	1, 1, 2
	1, 1, 1

LCM of 16, 8 and 32 $\Rightarrow$

$\text{LCM} = 2\times2\times2\times2\times2=32$

$\frac{3\times2}{16\times2}=\frac{6}{32}, \frac{1\times4}{8\times4}=\frac{4}{32}, \frac{9}{32}$

Here, $4 < 6 < 9$

$\therefore \quad \frac{4}{32}<\frac{6}{32}<\frac{9}{32}$ or $\frac{1}{8}<\frac{3}{16}<\frac{9}{32}$

(e) $\frac{4}{5}, \frac{8}{25}, \frac{9}{20}$

2	5, 20, 25
2	5, 10, 25
5	5, 5, 25
5	1, 1, 5
	1, 1, 1

LCM of 5, 25, 20 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 5 \times 5 = 100$

$\frac{4 \times 20}{5 \times 20} = \frac{80}{100}, \frac{8 \times 4}{25 \times 4} = \frac{32}{100}, \frac{9 \times 5}{20 \times 5} = \frac{45}{100}$

Here, $32 < 45 < 80$

$\frac{32}{100} < \frac{45}{100} < \frac{80}{100}$ or $\frac{8}{25} < \frac{9}{20} < \frac{4}{5}$

(f) $\frac{11}{21}, \frac{5}{7}, \frac{1}{3}$

3	21, 7, 3
7	7, 7, 1
	1, 1, 1

LCM of 21, 7 and 3 $\Rightarrow$

$\text{LCM} = 3 \times 7 = 21$

$\frac{11}{21}, \frac{5 \times 3}{7 \times 3} = \frac{15}{21}, \frac{1 \times 7}{3 \times 7} = \frac{7}{21}$

Here, $7 < 11 < 15$

$\frac{7}{21} < \frac{11}{21} < \frac{15}{21}$ or $\frac{1}{3} < \frac{11}{21} < \frac{5}{7}$

(g) $\frac{3}{4}, \frac{7}{12}, \frac{9}{14}$

2	4, 12, 14
2	2, 6, 7
3	1, 3, 7
7	1, 1, 7
	1, 1, 1

LCM of 4, 12 and 14 $\Rightarrow$

$\text{LCM} = 2 \times 2 \times 3 \times 7 = 84$

$\frac{3 \times 21}{4 \times 21} = \frac{63}{84}, \frac{7 \times 7}{12 \times 7} = \frac{49}{84}, \frac{9 \times 6}{14 \times 6} = \frac{54}{84}$

Here, $49 < 54 < 63$

$\therefore \quad \frac{49}{84} < \frac{54}{84} < \frac{63}{84}$ or $\frac{7}{12} < \frac{9}{14} < \frac{3}{4}$

(h) $\frac{5}{7}, \frac{10}{21}, \frac{3}{14}$

2	7, 21, 14
3	7, 21, 7
7	7, 7, 7
	1, 1, 1

LCM of 7, 21, 14 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 7 = 42$

$\frac{5 \times 6}{7 \times 6} = \frac{30}{42}, \frac{10 \times 2}{21 \times 2} = \frac{20}{42}, \frac{3 \times 3}{14 \times 3} = \frac{9}{42}$

Here, $9 < 20 < 30$

$\frac{9}{42} < \frac{20}{42} < \frac{30}{42}$ or $\frac{3}{14} < \frac{10}{21} < \frac{5}{7}$

4. (a) $\frac{3}{4}, \frac{2}{5}, \frac{4}{7}$

LCM of 4, 5 and 7 $\Rightarrow$

$\text{LCM} = 4 \times 5 \times 7 = 140$

$\frac{3 \times 35}{4 \times 35} = \frac{105}{140}, \frac{2 \times 28}{5 \times 28} = \frac{56}{140}, \frac{4 \times 20}{7 \times 20} = \frac{80}{140}$

Here, $\frac{105}{140} > \frac{80}{140} > \frac{56}{140}$ or $\frac{3}{4} > \frac{4}{7} > \frac{2}{5}$

4	4, 5, 7
5	1, 5, 7
7	1, 1, 7
	1, 1, 1

(b) $\frac{2}{3}, \frac{5}{6}, \frac{1}{9}$

LCM of 3, 6 and 9 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 3 = 18$

$\frac{2 \times 6}{3 \times 6} = \frac{12}{18}, \frac{5 \times 3}{6 \times 3} = \frac{15}{18}, \frac{1 \times 2}{9 \times 2} = \frac{2}{18}$

Here, $\frac{15}{18} > \frac{12}{18} > \frac{2}{18}$ or $\frac{5}{6} > \frac{2}{3} > \frac{1}{9}$

2	3, 6, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

(c) $\frac{4}{7}, \frac{3}{21}, \frac{5}{14}$

LCM of 7, 21 and 14 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 7 = 42$

$\frac{4 \times 6}{7 \times 6} = \frac{24}{42}, \frac{3 \times 2}{21 \times 2} = \frac{6}{42}, \frac{5 \times 3}{14 \times 3} = \frac{15}{42}$

Here $\frac{24}{42} > \frac{15}{42} > \frac{6}{42}$ or $\frac{4}{7} > \frac{5}{14} > \frac{3}{21}$

2	7, 21, 14
3	7, 21, 7
7	7, 7, 7
	1, 1, 1

(d) $\frac{7}{10}, \frac{8}{15}, \frac{1}{3}$

LCM of 10, 15 and 3 $\Rightarrow$

$\text{LCM} = 2 \times 3 \times 5 = 30$

$\frac{7 \times 3}{10 \times 3} = \frac{21}{30}, \frac{8 \times 2}{15 \times 2} = \frac{16}{30}, \frac{1 \times 10}{3 \times 10} = \frac{10}{30}$

Here, $\frac{21}{30} > \frac{16}{30} > \frac{10}{30}$ or $\frac{7}{10} > \frac{8}{15} > \frac{1}{3}$

2	10, 15, 3
3	5, 15, 3
5	5, 5, 1
	1, 1, 1

(e) $\frac{3}{8}, \frac{5}{6}, \frac{5}{12}$

LCM of 8, 6 and 12 $\Rightarrow$

2	8, 6, 12
2	4, 3, 6
2	2, 3, 3
3	1, 3, 3
	1, 1, 1

LCM $= 2\times2\times2\times3 = 24$

$\frac{3\times3}{8\times3} = \frac{9}{24}, \frac{5\times4}{6\times4} = \frac{20}{24}, \frac{5\times2}{12\times2} = \frac{10}{24}$

Here, $\frac{20}{24} > \frac{10}{24} > \frac{9}{24}$ or $\frac{5}{6} > \frac{5}{12} > \frac{3}{8}$

(f) $\frac{7}{15}, \frac{3}{5}, \frac{1}{3}$

3	15, 5, 3
5	5, 5, 1
	1, 1, 1

LCM of 15, 5 and 3 $\Rightarrow$

LCM $= 3\times5 = 15$

$\frac{7}{15}, \frac{3\times3}{5\times3} = \frac{9}{15}, \frac{1\times5}{3\times5} = \frac{5}{15}$

Here, $\frac{9}{15} > \frac{7}{15} > \frac{5}{15}$ or $\frac{3}{5} > \frac{7}{15} > \frac{1}{3}$

(g) $\frac{7}{10}, \frac{3}{5}, \frac{1}{4}$ LCM of 10, 5 and 4 $\Rightarrow$

2	10, 5, 4
2	5, 5, 2
5	5, 5, 1
	1, 1, 1

LCM $= 2\times2\times5 = 20$

$\frac{7\times2}{10\times2} = \frac{14}{20}, \frac{3\times4}{5\times4} = \frac{12}{20}, \frac{1\times5}{4\times5} = \frac{5}{20}$

Here, $\frac{14}{20} > \frac{12}{20} > \frac{5}{20}$ or $\frac{7}{10} > \frac{3}{5} > \frac{1}{4}$

(h) $\frac{2}{3}, \frac{7}{12}, \frac{3}{4}$ LCM of 3, 12, 4

2	3, 12, 4
2	3, 6, 2
3	3, 3, 1
	1, 1, 1

LCM $= 2\times2\times3 = 12$

$\frac{2\times4}{3\times4} = \frac{8}{12}, \frac{7}{12}, \frac{3\times3}{4\times3} = \frac{9}{12}$

Here, $\frac{9}{12} > \frac{8}{12} > \frac{7}{12}$ or $\frac{3}{4} > \frac{2}{3} > \frac{7}{12}$

Let Us Do-8G

1. $\frac{2}{12} + \frac{3}{12} = \frac{\boxed{2} + \boxed{3}}{12} = \frac{\boxed{5}}{12}$

2. $\frac{2}{18} + \frac{3}{18} = \frac{\boxed{2} + \boxed{3}}{18} = \frac{\boxed{5}}{18}$

3. $\frac{2}{9} + \frac{6}{9} = \frac{2+6}{\boxed{9}} = \frac{8}{\boxed{9}}$

4. $\frac{6}{32}+\frac{2}{32}+\frac{3}{32}=\frac{\boxed{6}+\boxed{2}+\boxed{3}}{32}=\frac{\boxed{11}}{32}$

5. $\frac{3}{6}+\frac{2}{6}=\frac{3+2}{6}=\frac{5}{6}$

6. $\frac{4}{7}+\frac{1}{7}=\frac{4+1}{7}=\frac{5}{7}$

7. $\frac{4}{9}+\frac{1}{9}=\frac{4+1}{9}=\frac{5}{9}$

8. $\frac{3}{8}+\frac{2}{8}=\frac{3+2}{8}=\frac{5}{8}$

9. $\frac{7}{25}+\frac{9}{25}=\frac{7+9}{25}=\frac{16}{25}$

10. $\frac{7}{8}+\frac{0}{8}=\frac{7+0}{8}=\frac{7}{8}$

11. $\frac{5}{13}+\frac{2}{13}=\frac{5+2}{13}=\frac{7}{13}$

12. $\frac{5}{14}+\frac{6}{14}=\frac{5+6}{14}=\frac{11}{14}$

13. $\frac{7}{20}+\frac{3}{20}+\frac{5}{20}=\frac{7+3+5}{20}=\frac{15}{20}$

14. $\frac{7}{22}+\frac{5}{22}+\frac{6}{22}=\frac{7+5+6}{22}=\frac{18}{22}$

15. $\frac{17}{53}+\frac{21}{53}+\frac{9}{53}=\frac{17+21+9}{53}=\frac{47}{53}$

16. $\frac{16}{91}+\frac{15}{91}+\frac{36}{91}=\frac{16+15+36}{91}=\frac{67}{91}$

17. $\frac{17}{83}+\frac{18}{83}+\frac{31}{83}=\frac{17+18+31}{83}=\frac{66}{83}$

18. $\frac{8}{19}+\frac{2}{19}+\frac{3}{19}=\frac{8+2+3}{19}=\frac{13}{19}$

19. $\frac{4}{7}+\frac{2}{7}=\frac{4+2}{7}=\frac{6}{7}$

20. $\frac{3}{22}+\frac{17}{22}=\frac{3+17}{22}=\frac{20}{22}$

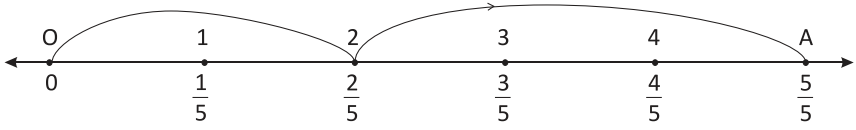
21. $\frac{5}{33}+\frac{13}{33}+\frac{1}{33}=\frac{5+13+1}{33}=\frac{19}{33}$

22. $\frac{5}{17}+\frac{2}{17}+\frac{4}{17}=\frac{5+2+4}{17}=\frac{11}{17}$

23. $\frac{11}{43}+\frac{9}{43}+\frac{20}{43}=\frac{11+9+20}{43}=\frac{40}{43}$

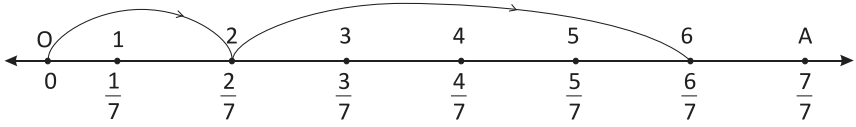
24. $\frac{1}{77}+\frac{29}{77}+\frac{30}{77}=\frac{1+29+30}{77}=\frac{60}{77}$

25. $\frac{2}{5}$ and $\frac{3}{5}$, Take a line segment OA on a line. Let the length OA = 1 unit Divide OA into 5 equal parts then each part represents $\frac{2}{5}$ of the whole. Starting with the point O. first move by.



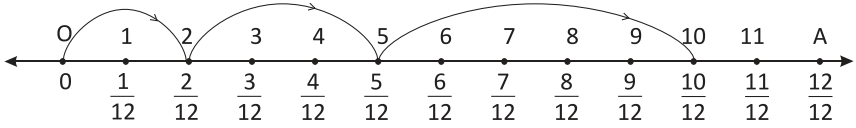
or $\frac{2}{5}+\frac{3}{5}=\frac{5}{5}=1$

26. $\frac{2}{7}$ and $\frac{4}{7}$



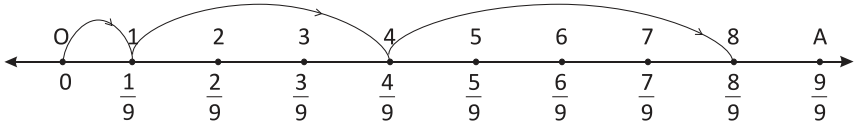
$$\frac{2}{7}+\frac{4}{7}=\frac{2+4}{7}=\frac{6}{7}$$

27. $\frac{2}{12}, \frac{3}{12}$ and $\frac{5}{12}$



$$\frac{2}{12}+\frac{3}{12}+\frac{5}{12}=\frac{2+3+5}{12}=\frac{10}{12}$$

28. $\frac{1}{9}, \frac{3}{9}$ and $\frac{4}{9}$



$$\frac{1}{9}+\frac{3}{9}+\frac{4}{9}=\frac{1+3+4}{9}=\frac{8}{9}$$

29. Neha spent her money on toffees $= \frac{1}{5}$

She spent some money on cakes $= \frac{3}{5}$

She spent in all $= \frac{1}{5} + \frac{3}{5} = \frac{1+3}{5} = \frac{4}{5}$

30. Ramesh finished his work in one day $= \frac{1}{8}$

Ramesh finished his work in second day $= \frac{2}{8}$

Ramesh finished his work in 3rd day $= \frac{3}{8}$

Total work he finished in three days

$\frac{1}{8} + \frac{2}{8} + \frac{3}{8} = \frac{1+2+3}{8} = \frac{6}{8}$

Let Us Do-8H

1. $\frac{2}{9} + \frac{1}{6}$

2	9, 6
3	9, 3
3	3, 1
	1, 1

LCM of 9 and $6 = 2 \times 3 \times 3 = 18$

$\frac{2 \times 2}{9 \times 2} = \frac{4}{18}, \frac{1 \times 3}{6 \times 3} = \frac{3}{18}$

$\frac{2}{9} + \frac{1}{6} = \frac{4}{18} + \frac{3}{18} = \frac{4+3}{18} = \frac{7}{18}$

2. $\frac{3}{7} + \frac{5}{21}$

3	7, 21
7	7, 7
	1, 1

LCM of 7 and $21 = 3 \times 7 = 21$

$\frac{3 \times 3}{7 \times 3} = \frac{9}{21}, \frac{5 \times 1}{21 \times 1} = \frac{5}{21}$

$\frac{3}{7} + \frac{5}{21} = \frac{9}{21} + \frac{5}{21} = \frac{9+5}{21} = \frac{14}{21} = \frac{2}{3}$

3. $\frac{1}{3} + \frac{10}{27}$

3	3, 27
3	1, 9
3	1, 3
	1, 1

LCM of 3 and $27 = 3 \times 3 \times 3 = 27$

$\frac{1}{3} \times \frac{9}{9} = \frac{9}{27}, \frac{10 \times 1}{27 \times 1} = \frac{10}{27}$

$\frac{1}{3} + \frac{10}{27} \Rightarrow \frac{9}{27} + \frac{10}{27} \Rightarrow \frac{9+10}{27} = \frac{19}{27}$

4. $\frac{1}{4}+\frac{7}{8}$

2	4, 8
2	2, 4
2	1, 2
	1, 1

LCM of 4 and $8 = 2\times2\times2 = 8$

$\frac{1\times2}{4\times2}=\frac{2}{8}, \frac{7\times1}{8\times1}=\frac{7}{8}$

$\frac{1}{4}+\frac{7}{8}=\frac{2}{8}+\frac{7}{8}=\frac{2+7}{8}=\frac{9}{8}$

5. $\frac{1}{2}+\frac{2}{3}$

LCM of 2 and $3 = 2\times3 = 6$

$\frac{1\times3}{2\times3}=\frac{3}{6}, \frac{2\times2}{3\times2}=\frac{4}{6}$

$\frac{1}{2}+\frac{2}{3}=\frac{3}{6}+\frac{4}{6}=\frac{7}{6}$

6. $\frac{2}{3}+\frac{3}{7}$

LCM of 3 and $7 = 3\times7 = 21$

$\frac{2\times7}{3\times7}=\frac{14}{21}, \frac{3\times3}{7\times3}=\frac{9}{21}$

$\frac{2}{3}+\frac{3}{7}=\frac{14}{21}+\frac{9}{21}=\frac{23}{21}=1\frac{2}{21}$

7. $\frac{5}{12}+\frac{7}{18}$

2	12, 18
2	6, 9
3	3, 9
3	1, 3
	1, 1

LCM of 12 and $18 = 2\times2\times3\times3 = 36$

$\frac{5\times3}{12\times3}=\frac{15}{36}, \frac{7\times2}{18\times2}=\frac{14}{36}$

$\frac{5}{12}+\frac{7}{18}=\frac{15}{36}+\frac{14}{36}=\frac{15+14}{36}=\frac{29}{36}$

8. $\frac{11}{21}+\frac{5}{6}$

2	6, 21
3	3, 21
7	1, 7
	1, 1

LCM of 21 and $6 = 2\times3\times7 = 42$

$\frac{11\times2}{21\times2}=\frac{22}{42}, \frac{5\times7}{6\times7}=\frac{35}{42}$

$\frac{11}{21}+\frac{5}{6}=\frac{22}{42}+\frac{35}{42}=\frac{22+35}{42}=\frac{57}{42}=1\frac{15}{42}$

9. $\frac{7}{3}+\frac{15}{6}+\frac{3}{4}$

2	3, 6, 4
2	3, 3, 2
3	3, 3, 1
	1, 1, 1

LCM of 3, 6 and $4 = 2\times2\times3 = 12$

$\frac{7\times4}{3\times4}=\frac{28}{12}, \frac{15\times2}{6\times2}=\frac{30}{12}, \frac{3\times3}{4\times3}=\frac{9}{12}$

$\frac{7}{3}+\frac{15}{6}+\frac{3}{4} \Rightarrow \frac{28}{12}+\frac{30}{12}+\frac{9}{12}$

$=\frac{28+30+9}{12}=\frac{67}{12}=5\frac{7}{12}$

10. $\frac{2}{5}+\frac{7}{8}+\frac{1}{4}$

2	5, 8, 4
2	5, 4, 2
2	5, 2, 1
5	5, 1, 1
	1, 1, 1

LCM of 5, 8 and $4 = 2\times2\times2\times5 = 40$

$\frac{2\times8}{5\times8}=\frac{16}{40}, \frac{7\times5}{8\times5}=\frac{35}{40}, \frac{1\times10}{4\times10}=\frac{10}{40}$

$\frac{2}{5}+\frac{7}{8}+\frac{1}{4}=\frac{16}{40}+\frac{35}{40}+\frac{10}{40}$

$=\frac{16+35+10}{40}=\frac{61}{40}=1\frac{21}{40}$

11. $\frac{1}{5}+\frac{7}{15}+\frac{5}{12}$

2	5, 15, 12
2	5, 15, 6
3	5, 15, 3
5	5, 5, 1
	1, 1, 1

LCM of 5, 15 and $12 = 2\times2\times3\times5 = 60$

$\frac{1\times12}{5\times12}=\frac{12}{60}, \frac{7\times4}{15\times4}=\frac{28}{60}, \frac{5\times5}{12\times5}=\frac{25}{60}$

$\frac{1}{5}+\frac{7}{15}+\frac{5}{12}=\frac{12}{60}+\frac{28}{60}+\frac{25}{60}$

$=\frac{12+28+25}{60}=\frac{65}{60}=1\frac{5}{60}$

12. $\frac{1}{3}+\frac{1}{9}+\frac{7}{27}$

3	3, 9, 27
3	1, 3, 9
3	1, 1, 3
	1, 1, 1

LCM of 3, 9 and $27 = 3\times3\times3 = 27$

$\frac{1\times9}{3\times9}=\frac{9}{27}, \frac{1\times3}{9\times3}=\frac{3}{27}, \frac{7}{27}$

$\frac{1}{3}+\frac{1}{9}+\frac{7}{27}=\frac{9}{27}+\frac{3}{27}+\frac{7}{27}=\frac{9+3+7}{27}=\frac{19}{27}$

13. $\frac{1}{3}+\frac{5}{6}+\frac{1}{2}$

2	3, 6, 2
3	3, 3, 1
	1, 1, 1

LCM of 3, 6 and $2 = 2\times3 = 6$

$\frac{1\times2}{3\times2}=\frac{2}{6}, \frac{5\times1}{6\times1}=\frac{5}{6}, \frac{1\times3}{2\times3}=\frac{3}{6}$

$\frac{1}{3}+\frac{5}{6}+\frac{1}{2}=\frac{2}{6}+\frac{5}{6}+\frac{3}{6}=\frac{2+5+3}{6}=\frac{10}{6}=1\frac{2}{3}$

14. $\frac{3}{4}+\frac{5}{8}+\frac{7}{12}$

2	4, 8, 12
2	2, 4, 6
2	1, 2, 3
3	1, 1, 3
	1, 1, 1

LCM of 4, 8, 12 $= 2\times2\times2\times3 = 24$

$\frac{3\times6}{4\times6}=\frac{18}{24}, \frac{5\times3}{8\times3}=\frac{15}{24}, \frac{7\times2}{12\times2}=\frac{14}{24}$

$\frac{3}{4}+\frac{5}{8}+\frac{7}{12}=\frac{18}{24}+\frac{15}{24}+\frac{14}{24}$

$=\frac{18+15+14}{24}=\frac{47}{24}=1\frac{23}{24}$

15. $\frac{5}{8}+\frac{9}{16}+\frac{13}{24}$

2	8, 16, 24
2	4, 8, 12
2	2, 4, 6
2	1, 2, 3
3	1, 1, 3
	1, 1, 1

LCM of 8, 16 and $24 = 2\times2\times2\times2\times3 = 48$

$\frac{5\times6}{8\times6}=\frac{30}{48}, \frac{9\times3}{16\times3}=\frac{27}{48}, \frac{13\times2}{24\times2}=\frac{26}{48}$

$\frac{5}{8}+\frac{9}{16}+\frac{13}{24}=\frac{30}{48}+\frac{27}{48}+\frac{26}{48}$

$=\frac{30+27+26}{48}=\frac{83}{48}=1\frac{35}{48}$

16. $\frac{3}{8}+\frac{5}{12}+\frac{1}{4}$

2	8, 12, 4
2	4, 6, 2
2	2, 3, 1
3	1, 3, 1
	1, 1, 1

LCM of 8, 12 and $14 = 2\times2\times2\times3 = 24$

$\frac{3\times3}{8\times3}=\frac{9}{24}, \frac{5\times2}{12\times2}=\frac{10}{24}, \frac{1\times6}{4\times6}=\frac{6}{24}$x

$\frac{3}{8}+\frac{5}{12}+\frac{1}{4}=\frac{9}{24}+\frac{10}{24}+\frac{6}{24}$

$=\frac{9+10+6}{24}=\frac{25}{24}=1\frac{1}{24}$

17. $\frac{3}{5}+\frac{5}{8}+\frac{1}{4}$

LCM of 5, 8 and $4 = 2\times2\times2\times5 = 40$

$\frac{3\times8}{5\times8}=\frac{24}{40}, \frac{5\times5}{8\times5}=\frac{25}{40},$

$\frac{3}{5}+\frac{5}{8}+\frac{1}{4}=\frac{24}{40}+\frac{25}{40}+\frac{10}{40}$

$\frac{3}{5}+\frac{5}{8}+\frac{1}{4}=\frac{24}{40}+\frac{25}{40}+\frac{10}{40}$

$=\frac{24+25+10}{40}=\frac{59}{40}=1\frac{19}{40}$

2	5, 8, 4
2	5, 4, 2
2	5, 2, 1
5	5, 1, 1
	1, 1, 1

18. $\frac{3}{4}+\frac{2}{5}+\frac{1}{2}$

LCM of 4, 5 and $2 = 2\times2\times5 = 20$

$\frac{3\times5}{4\times5}=\frac{15}{20}, \frac{2\times4}{5\times4}=\frac{8}{20}, \frac{1\times10}{2\times10}=\frac{10}{20}$

$\frac{3}{4}+\frac{2}{5}+\frac{1}{2}=\frac{15}{20}+\frac{8}{20}+\frac{10}{20}$

$=\frac{15+8+10}{20}=\frac{33}{20}=1\frac{13}{20}$

2	4, 5, 2
2	2, 5, 1
5	1, 5, 1
	1, 1, 1

19. $\frac{3}{10}+\frac{7}{15}+\frac{9}{20}$

LCM of 10, 15 and $20 = 2\times2\times3\times5 = 60$

$\frac{3\times6}{10\times6}=\frac{18}{60}, \frac{7\times4}{15\times4}=\frac{28}{60}, \frac{9\times3}{20\times3}=\frac{27}{60}$

$\frac{3}{10}+\frac{7}{15}+\frac{9}{20}=\frac{18}{60}+\frac{28}{60}+\frac{27}{60}$

$=\frac{18+28+27}{60}=\frac{73}{60}=1\frac{13}{60}$

2	10, 15, 20
2	5, 15, 10
3	5, 15, 5
5	5, 5, 5
	1, 1, 1

20. $\frac{7}{8}+\frac{5}{16}+\frac{13}{24}$

LCM of 8, 16 and $24 = 2\times2\times2\times2\times3 = 48$

$\frac{7\times6}{8\times6}=\frac{42}{48}, \frac{5\times3}{16\times3}=\frac{15}{48}, \frac{13\times2}{24\times2}=\frac{26}{48}$

2	8, 16, 24
2	4, 8, 12
2	2, 4, 6
2	1, 2, 3
3	1, 1, 3
	1, 1, 1

$$\frac{7}{8}+\frac{5}{16}+\frac{13}{24}=\frac{42}{48}+\frac{15}{48}+\frac{26}{48}$$
$$=\frac{42+15+26}{48}=\frac{83}{48}=1\frac{35}{48}$$

21. $\frac{3}{8}+\frac{5}{6}+\frac{1}{9}$

2	8, 6, 9
2	4, 3, 9
2	2, 3, 9
3	1, 3, 9
3	1, 1, 3
	1, 1, 1

LCM of 8, 6 and $9 = 2\times2\times2\times3\times3 = 72$

$$\frac{3\times9}{8\times9}=\frac{27}{72},\frac{5\times12}{6\times12}=\frac{60}{72},\frac{1\times8}{9\times8}=\frac{8}{72}$$

$$\frac{3}{8}+\frac{5}{6}+\frac{1}{9}=\frac{27}{72}+\frac{60}{72}+\frac{8}{72}$$

$$\frac{27+60+8}{72}=\frac{95}{72}=1\frac{23}{72}$$

22. $\frac{1}{6}+\frac{5}{12}+\frac{7}{18}$

2	6, 12, 18
2	3, 6, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

LCM of 6, 12 and $18 = 2\times2\times3\times3 = 36$

$$\frac{1\times6}{6\times6}=\frac{6}{36},\frac{5\times3}{12\times3}=\frac{15}{36},\frac{7\times2}{18\times2}=\frac{14}{36}$$

$$\frac{1}{6}+\frac{5}{12}+\frac{7}{18}=\frac{6}{36}+\frac{15}{36}+\frac{14}{36}$$
$$=\frac{6+15+14}{36}=\frac{35}{36}$$

23. $\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{8}$

2	2, 3, 4, 8
2	1, 3, 2, 4
2	1, 3, 1, 2
3	1, 3, 1, 1
	1, 1, 1, 1

LCM of 2, 3, 4 and $8 = 2\times2\times2\times3 = 24$

$$\frac{1\times12}{2\times12}=\frac{12}{24},\frac{1\times8}{3\times8}=\frac{8}{24},$$

$$\frac{1\times6}{4\times6}=\frac{6}{24},\frac{1\times3}{8\times3}=\frac{3}{24}$$

$$\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{8}=\frac{12}{24}+\frac{8}{24}+\frac{6}{24}+\frac{3}{24}$$
$$=\frac{12+8+6+3}{24}$$
$$=\frac{29}{24}=1\frac{5}{24}$$

24. $\frac{1}{1}+\frac{2}{3}+\frac{3}{4}+\frac{1}{8}$

LCM of 1, 3, 4 and 8 $=2\times2\times2\times3=24$

$\frac{1\times24}{1\times24}=\frac{24}{24}, \frac{2\times8}{3\times8}=\frac{16}{24},$

$\frac{3\times6}{4\times6}=\frac{18}{24}, \frac{1\times3}{8\times3}=\frac{3}{24}$

$\frac{1}{1}+\frac{2}{3}+\frac{3}{4}+\frac{1}{8}=\frac{24}{24}+\frac{16}{24}+\frac{18}{24}+\frac{3}{24}$

$=\frac{24+16+18+3}{24}=\frac{61}{24}=2\frac{13}{24}$

2	1, 3, 4, 8
2	1, 3, 2, 4
2	1, 3, 1, 2
3	1, 3, 1, 1
	1, 1, 1, 1

Let Us Do-8(I)

1. $2\frac{1}{8}+3\frac{5}{8}=\frac{17}{8}+\frac{29}{8}=\frac{17+29}{8}=\frac{46}{8}=5\frac{6}{8}$

2. $4\frac{1}{4}+6\frac{1}{8}=\frac{17}{4}+\frac{49}{8}=\frac{17\times2+49\times1}{8}$

$=\frac{34+49}{8}=\frac{83}{8}=10\frac{3}{8}$

2	4, 8
2	2, 4
2	1, 2
	1, 1

3. $4\frac{5}{7}+5\frac{3}{5}=\frac{33}{7}+\frac{28}{5}=\frac{33\times5+28\times7}{35}$

$=\frac{165+196}{35}=\frac{361}{35}=10\frac{11}{35}$

4. $1\frac{1}{2}+3\frac{1}{3}=\frac{3}{2}+\frac{10}{3}=\frac{9+20}{6}=\frac{29}{6}=4\frac{5}{6}$

5. $3\frac{1}{4}+2\frac{1}{6}=\frac{13}{4}+\frac{13}{6}$

$=\frac{13\times3+13\times2}{12}$

$=\frac{39+26}{12}=\frac{65}{12}=5\frac{5}{12}$

2	4, 6
2	2, 3
3	1, 3
	1, 1

6. $3\frac{5}{8}+2\frac{1}{12}=\frac{29}{8}+\frac{25}{12}=\frac{29\times3+25\times2}{24}$

$=\frac{87+50}{24}=\frac{137}{24}=5\frac{17}{24}$

2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

7. $\frac{9}{16}+3\frac{7}{24}=\frac{9}{16}+\frac{79}{24}$

$=\frac{9\times3+79\times2}{48}$

$=\frac{27+158}{48}=\frac{185}{48}=3\frac{41}{48}$

2	16, 24
2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

8. $7\frac{3}{4}+4\frac{2}{3}=\frac{31}{4}+\frac{14}{3}=\frac{31\times3+14\times4}{12}$

$=\frac{93+56}{12}=\frac{149}{12}=12\frac{5}{12}$

9. $4\frac{5}{12}+2\frac{11}{16}=\frac{53}{12}+\frac{43}{16}$

$=\frac{53\times4+43\times3}{48}$

$=\frac{212+129}{48}=\frac{341}{48}=7\frac{5}{48}$

2	12, 16
2	6, 8
2	3, 4
2	3, 2
3	3, 1
	1, 1

10. $2\frac{2}{7}+\frac{9}{14}=\frac{16}{7}+\frac{9}{14}$

$=\frac{16\times2+9\times1}{14}$

$=\frac{32+9}{14}=\frac{41}{14}=2\frac{13}{14}$

11. $6\frac{5}{12}+\frac{5}{6}$

$=\frac{77}{12}+\frac{5}{6}=\frac{77+5\times2}{12}$

$=\frac{87}{12}=\frac{29}{4}=7\frac{1}{4}$

2	6, 12
2	3, 6
3	3, 3
	1, 1

12. $5\frac{1}{10}+2\frac{2}{5}$

$=\frac{51}{10}+\frac{12}{5}=\frac{51+12\times2}{10}$

$=\frac{51+24}{10}=\frac{75}{10}=\frac{15}{2}=7\frac{1}{2}$

2	10, 5
5	5, 5
	1, 1

13. $2\frac{3}{5}+4\frac{1}{3}+5\frac{4}{5}=\frac{13}{5}+\frac{13}{3}+\frac{29}{5}$

$=\frac{13\times3+13\times5+29\times3}{15}$

$=\frac{39+65+87}{15}$

$=\frac{191}{15}=12\frac{11}{15}$

5	5, 3, 5
3	1, 3, 1
	1, 1, 1

$5\times3=15$

14. $1\frac{3}{8}+2\frac{5}{12}+3\frac{11}{16}=\frac{11}{8}+\frac{29}{12}+\frac{59}{16}$

$=\frac{11\times6+29\times4+59\times3}{48}$

$=\frac{66+116+177}{48}$

$=\frac{359}{48}=7\frac{23}{48}$

2	8, 12, 16
2	4, 6, 8
2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

15. $3\frac{2}{3}+5\frac{8}{9}+4\frac{7}{12}=\frac{11}{3}+\frac{53}{9}+\frac{55}{12}$

$=\frac{11\times12+53\times4+55\times3}{36}$

$=\frac{132+212+165}{36}$

$=\frac{509}{36}=14\frac{5}{36}$

2	3, 9, 12
2	3, 9, 6
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

16. $3\frac{1}{2}+5\frac{3}{4}+2\frac{5}{8}=\frac{7}{2}+\frac{23}{4}+\frac{21}{8}$

$=\frac{7\times4+23\times2+21\times1}{8}$

$=\frac{28+46+21}{8}=\frac{95}{8}=11\frac{7}{8}$

2	2, 4, 8
2	1, 2, 4
2	1, 1, 2
	1, 1, 1

17. $4\frac{2}{5}+2\frac{1}{10}+\frac{4}{15}=\frac{22}{5}+\frac{21}{10}+\frac{4}{15}$

$=\frac{22\times6+21\times3+4\times2}{30}$

$=\frac{132+63+8}{30}=\frac{203}{30}=6\frac{23}{30}$

2	5, 10, 15
3	5, 5, 15
5	5, 5, 5
	1, 1, 1

18. $3\frac{3}{8}+\frac{2}{1}+2\frac{5}{12}=\frac{27}{8}+\frac{2}{1}+\frac{29}{12}$

$$=\frac{27\times3+2\times24+29\times2}{24}$$

$$=\frac{81+48+58}{24}=\frac{187}{24}=7\frac{19}{24}$$

2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

19. $\frac{7}{8}+2\frac{5}{16}+1\frac{3}{4}=\frac{7}{8}+\frac{37}{16}+\frac{7}{4}$

$$=\frac{7\times2+37\times1+7\times4}{16}$$

$$=\frac{14+37+28}{16}=\frac{79}{16}=4\frac{15}{16}$$

2	8, 16, 4
2	4, 8, 2
2	2, 4, 1
2	1, 2, 1
	1, 1, 1

20. $3\frac{2}{5}+\frac{3}{1}+\frac{7}{10}=\frac{17}{5}+\frac{3}{1}+\frac{7}{10}$

$$=\frac{17\times2+3\times10+7\times1}{10}$$

$$=\frac{34+30+7}{10}=\frac{71}{10}=7\frac{1}{10}$$

2	5, 10
5	5, 5
	1, 1

21. $2\frac{5}{12}+3\frac{4}{9}+4\frac{1}{6}=\frac{29}{12}+\frac{31}{9}+\frac{25}{6}$

$$=\frac{29\times3+31\times4+25\times6}{36}$$

$$=\frac{87+124+150}{36}=\frac{361}{36}=10\frac{1}{36}$$

2	6, 9, 12
2	3, 9, 6
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

22. $3\frac{5}{9}+2\frac{1}{3}+4\frac{5}{6}=\frac{32}{9}+\frac{7}{3}+\frac{29}{6}$

$$=\frac{32\times2+7\times6+29\times3}{18}$$

$$=\frac{64+42+87}{18}=\frac{193}{18}=10\frac{13}{18}$$

2	3, 6, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

23. $9\frac{1}{2}+2\frac{4}{9}+3\frac{1}{6}+2$

$$=\frac{19}{2}+\frac{22}{9}+\frac{19}{6}+\frac{2}{1}$$

2	2, 9, 6
3	1, 9, 3
3	1, 3, 1
	1, 1, 1

$$= \frac{19\times 9 + 22\times 2 + 19\times 3 + 2\times 18}{18}$$

$$= \frac{171 + 44 + 57 + 36}{18} = \frac{308}{18} = \frac{154}{9} = 17\frac{1}{9}$$

24. $4\frac{5}{12} + 2\frac{1}{6} + 3\frac{3}{18} + \frac{3}{1}$

$$= \frac{53}{12} + \frac{13}{6} + \frac{57}{18} + \frac{3}{1}$$

$$= \frac{53\times 3 + 13\times 6 + 57\times 2 + 3\times 36}{36}$$

$$= \frac{159 + 78 + 114 + 108}{36} = \frac{459}{36} = \frac{51}{4} = 12\frac{3}{4}$$

2	12, 6, 18
2	6, 3, 9
3	3, 3, 9
3	1, 1, 3
	1, 1, 1

Let Us Do -8J

1. $\frac{5}{7} - \frac{2}{7} = \frac{5-2}{7} = \frac{3}{7}$

2. $\frac{5}{9} - \frac{2}{9} = \frac{5-2}{9} = \frac{3}{9}$

3. $\frac{7}{10} - \frac{3}{10} = \frac{7-3}{10} = \frac{4}{10}$

4. $\frac{6}{8} - \frac{3}{8} = \frac{6-3}{8} = \frac{3}{8}$

5. $\frac{2}{3} - \frac{1}{3} = \frac{2-1}{3} = \frac{1}{3}$

6. $\frac{3}{4} - \frac{2}{4} = \frac{3-2}{4} = \frac{1}{4}$

7. $\frac{8}{11} - \frac{3}{11} = \frac{8-3}{11} = \frac{5}{11}$

8. $\frac{8}{13} - \frac{6}{13} = \frac{8-6}{13} = \frac{2}{13}$

9. $\frac{7}{15} - \frac{2}{15} = \frac{7-2}{15} = \frac{5}{15}$

10. $\frac{11}{14} - \frac{6}{14} = \frac{11-6}{14} = \frac{5}{14}$

11. $\frac{16}{19} - \frac{12}{19} = \frac{16-12}{19} = \frac{4}{19}$

12. $\frac{18}{37} - \frac{15}{37} = \frac{18-15}{37} = \frac{3}{37}$

13. $\frac{8}{10} - \frac{3}{10} = \frac{8-3}{10} = \frac{5}{10}$

14. $\frac{17}{25} - \frac{9}{25} = \frac{17-9}{25} = \frac{8}{25}$

15. $\frac{16}{20} - \frac{13}{20} = \frac{16-13}{20} = \frac{3}{20}$

16. $\frac{9}{20} - \frac{7}{20} = \frac{9-7}{20} = \frac{2}{20}$

17. $\frac{25}{37} - \frac{12}{37} = \frac{25-12}{37} = \frac{13}{37}$

18. $\frac{11}{35} - \frac{6}{35} = \frac{11-6}{35} = \frac{5}{35}$

19. $\frac{40}{57} - \frac{37}{57} = \frac{40-37}{57} = \frac{3}{57}$

20. $\frac{17}{22} - \frac{8}{22} = \frac{17-8}{22} = \frac{9}{22}$

21. $\frac{2}{7}$ from $\frac{6}{7} \Rightarrow \frac{6}{7} - \frac{2}{7} = \frac{6-2}{7} = \frac{4}{7}$

22. $\frac{15}{10}$ from $\frac{23}{10} \Rightarrow \frac{23}{10}-\frac{15}{10}=\frac{23-15}{10}=\frac{8}{10}$

23. $\frac{1}{8}$ from $\frac{7}{8} \Rightarrow \frac{7}{8}-\frac{1}{8}=\frac{7-1}{8}=\frac{6}{8}$

24. $\frac{21}{28}$ from $\frac{45}{8} \Rightarrow \frac{45}{28}-\frac{21}{28}=\frac{45-21}{28}=\frac{24}{28}$

25. $\frac{2}{11}$ from $\frac{9}{11} \Rightarrow \frac{9}{11}-\frac{2}{11}=\frac{9-2}{11}=\frac{7}{11}$

26. $\frac{3}{7}$ and $\frac{5}{7} \Rightarrow \frac{5}{7}-\frac{3}{7}=\frac{5-3}{7}=\frac{2}{7}$

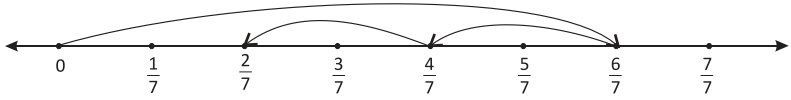
27. $\frac{13}{17}$ and $\frac{27}{17} \Rightarrow \frac{27}{17}-\frac{13}{17}=\frac{27-13}{17}=\frac{14}{17}$

28. $\frac{6}{15}$ and $\frac{13}{15} \Rightarrow \frac{13}{15}-\frac{6}{15}=\frac{13-6}{15}=\frac{7}{15}$

29. $\frac{9}{17}$ and $\frac{4}{17} \Rightarrow \frac{9}{17}-\frac{4}{17}=\frac{9-4}{17}=\frac{5}{17}$

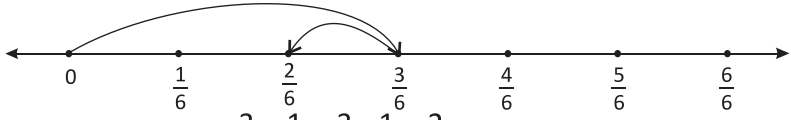
30. $\frac{8}{20}$ and $\frac{17}{20} \Rightarrow \frac{17}{20}-\frac{8}{20}=\frac{17-8}{20}=\frac{9}{20}$

31. $\frac{6}{7}$ and $\frac{4}{7}$



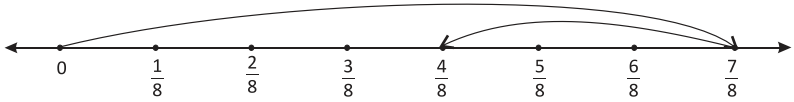
$$\frac{6}{7}-\frac{4}{7}=\frac{6-4}{7}=\frac{2}{7}$$

32. $\frac{3}{6}$ and $\frac{1}{6}$



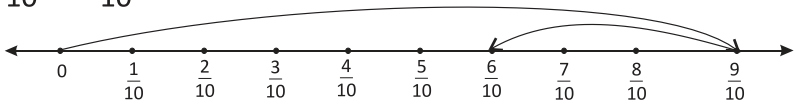
$$\frac{3}{6}-\frac{1}{6}=\frac{3-1}{6}=\frac{2}{6}$$

33. $\frac{7}{8}$ and $\frac{3}{8}$



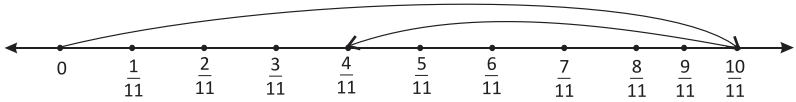
$$\frac{7}{8}-\frac{3}{8}=\frac{7-3}{8}=\frac{4}{8}$$

34. $\frac{9}{10}$ and $\frac{3}{10}$



$$\frac{9}{10}-\frac{3}{10}=\frac{9-3}{10}=\frac{6}{10}$$

35. $\frac{10}{11}$ and $\frac{6}{11}$



$$\frac{10}{11}-\frac{6}{11}=\frac{10-6}{11}=\frac{4}{11}$$

36. What should be added to $\frac{1}{9}$ to get $\frac{7}{9}$?

Required fraction $=\frac{7}{9}-\frac{1}{9}=\frac{7-1}{9}=\frac{6}{9}$

37. What should be added to $\frac{4}{13}$ to get $\frac{11}{13}$?

Required fraction $\frac{11}{13}-\frac{4}{13}=\frac{11-4}{13}=\frac{7}{13}$

38. Vipul spent his money on the purchase of a pant and shirt $=\frac{7}{9}$

costs of the shirt $=\frac{2}{9}$

He spent his money on the pant $=\frac{7}{9}-\frac{2}{9}=\frac{7-2}{9}=\frac{5}{9}$

39. Part of the book read on Monday $=\frac{7}{11}$

Part of the book read on Tuesday $=\frac{2}{11}$

$$\frac{7}{11}-\frac{2}{11}=\frac{7-2}{11}=\frac{5}{11}$$

40. A man spends his salary on food $=\frac{5}{9}$

A man spends his salary on clothing $=\frac{2}{9}$

total salary left with him $\frac{5}{9}-\frac{2}{9}=\frac{5-2}{9}=\frac{3}{9}$ or $\frac{1}{3}$

Let Us Do-8K

1. $\frac{2}{3}-\frac{4}{9}$

LCM of 3 and $9=9$

$\frac{2\times3}{3\times3}=\frac{6}{9}, \frac{4\times1}{9\times1}=\frac{4}{9}$

$\frac{2}{3}-\frac{4}{9}=\frac{6}{9}-\frac{4}{9}=\frac{6-4}{9}=\frac{2}{9}$

3	3, 9
3	1, 3
	1, 1

2. $\frac{1}{2}-\frac{1}{4}$

LCM of 2 and $4=4$

$\frac{1\times2}{2\times2}=\frac{2}{4}, \frac{1\times1}{4\times1}=\frac{1}{4}$

$\frac{1}{2}-\frac{1}{4}=\frac{2}{4}-\frac{1}{4}=\frac{2-1}{4}=\frac{1}{4}$

2	2, 4
2	1, 2
	1, 1

3. $\frac{2}{3}-\frac{1}{6}$

LCM of 3 and $6=6$

$\frac{2\times2}{3\times2}=\frac{4}{6}, \frac{1\times1}{6\times1}=\frac{1}{6}$

$\frac{2}{3}-\frac{1}{6}=\frac{4}{6}-\frac{1}{6}=\frac{4-1}{6}=\frac{3}{6}$

3	3, 6
2	1, 2
	1, 1

4. $\frac{1}{2}-\frac{1}{3}$

LCM of 2 and $3=6$

$\frac{1\times3}{2\times3}=\frac{3}{6}, \frac{1\times2}{3\times2}=\frac{2}{6}$

$\frac{1}{2}-\frac{1}{3}=\frac{3}{6}-\frac{2}{6}=\frac{3-2}{6}=\frac{1}{6}$

2	2, 3
3	1, 3
	1, 1

5. $\frac{9}{10}-\frac{8}{15}$

LCM of 10 and $15=30$

$\frac{9\times3}{10\times3}=\frac{27}{30}, \frac{8\times2}{15\times2}=\frac{16}{30}$

2	10, 15
3	5, 15
5	5, 5
	1, 1

$$\frac{9}{10}-\frac{8}{15}=\frac{27}{30}-\frac{16}{30}=\frac{27-16}{30}=\frac{11}{30}$$

6. $\frac{9}{16}-\frac{11}{24}$

LCM of 16 and 24 = 48

$$\frac{9\times3}{16\times3}=\frac{27}{48},\ \frac{11\times2}{24\times2}=\frac{22}{48}$$

$$\frac{9}{16}-\frac{11}{24}=\frac{27}{48}-\frac{22}{48}=\frac{27-22}{48}=\frac{5}{48}$$

2	16, 24
2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

7. $\frac{7}{9}-\frac{5}{12}$

LCM of 9 and 12 = 36

$$\frac{7\times4}{9\times4}=\frac{28}{36},\ \frac{5\times3}{12\times3}=\frac{15}{36}$$

$$\frac{7}{9}-\frac{5}{12}=\frac{28}{36}-\frac{15}{36}=\frac{28-15}{36}=\frac{13}{36}$$

2	9, 12
2	9, 6
3	9, 3
3	3, 1
	1, 1

8. $\frac{11}{15}-\frac{7}{20}$

LCM of 15 and 20 = 60

$$\frac{11\times4}{15\times4}=\frac{44}{60},\ \frac{7\times3}{20\times3}=\frac{21}{60}$$

$$\frac{11}{15}-\frac{7}{20}=\frac{44}{60}-\frac{21}{60}=\frac{44-21}{60}=\frac{23}{60}$$

2	15, 20
2	15, 10
3	15, 5
5	5, 5
	1, 1

9. $\frac{7}{16}-\frac{1}{24}$

LCM of 16 and 24 = 48

$$\frac{7\times3}{16\times3}=\frac{21}{48},\ \frac{1\times2}{24\times2}=\frac{2}{48}$$

$$\frac{7}{16}-\frac{1}{24}=\frac{21}{48}-\frac{2}{48}=\frac{19}{48}$$

2	16, 24
2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

10. $\frac{15}{4}-\frac{3}{8}$

LCM of 4 and 8 = 8

$$\frac{15\times2}{4\times2}=\frac{30}{8},\ \frac{3\times1}{8\times1}=\frac{3}{8}$$

$$\frac{15}{4}-\frac{3}{8}=\frac{30}{8}-\frac{3}{8}=\frac{27}{8}$$

2	4, 8
2	2, 4
2	1, 2
	1, 1

11. $\frac{4}{9}-\frac{5}{12}$

2	9, 12
2	9, 6
3	9, 3
3	3, 1
	1, 1

LCM of 9 and 12 = 36

$\frac{4\times4}{9\times4}=\frac{16}{36}, \frac{5\times3}{12\times3}=\frac{15}{36}$

$\frac{4}{9}-\frac{5}{12}=\frac{16}{36}-\frac{15}{36}=\frac{16-15}{36}=\frac{1}{36}$

12. $\frac{7}{8}-\frac{2}{12}$

2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

LCM of 8 and 12 = 24

$\frac{7\times3}{8\times3}=\frac{21}{24}, \frac{2\times2}{12\times2}=\frac{4}{24}$

$\frac{7}{8}-\frac{2}{12}=\frac{21}{24}-\frac{4}{24}=\frac{21-4}{24}=\frac{17}{24}$

13. $\frac{9}{15}-\frac{7}{20}$

2	15, 20
2	15, 10
3	15, 5
5	5, 5
	1, 1

LCM of 15 and 20 = 60

$\frac{9\times4}{15\times4}=\frac{36}{60}, \frac{7\times3}{20\times3}=\frac{21}{60}$

$\frac{9}{15}-\frac{7}{20}=\frac{36}{60}-\frac{21}{60}=\frac{36-21}{60}=\frac{15}{60}=\frac{1}{4}$

14. $\frac{13}{5}-\frac{7}{25}$

5	5, 25
5	1, 5
	1, 1

LCM of 5 and 25 = 25

$\frac{13\times5}{5\times5}=\frac{65}{25}, \frac{7\times1}{25\times1}=\frac{7}{25}$

$\frac{13}{5}-\frac{7}{25}=\frac{65}{25}-\frac{7}{25}=\frac{58}{25}$

15. $\frac{8}{9}-\frac{3}{5}$

LCM of 9 and 5 = 45

$\frac{8\times5}{9\times5}=\frac{40}{45}, \frac{3\times9}{5\times9}=\frac{27}{45}$

$\frac{8}{9}-\frac{3}{5}=\frac{40}{45}-\frac{27}{45}=\frac{40-27}{45}=\frac{13}{45}$

16. $4\frac{1}{6}-2\frac{2}{3}=\frac{25}{6}-\frac{8}{3}$

2	6, 3
3	3, 3
	1, 1

LCM of 6 and $3=6$

$\frac{25}{6},\frac{8\times2}{3\times2}=\frac{16}{6}$

$4\frac{1}{6}-2\frac{2}{3}=\frac{25}{6}-\frac{16}{6}=\frac{25-16}{6}=\frac{9}{6}=\frac{3}{2}=1\frac{1}{2}$

17. $6\frac{3}{8}-3\frac{3}{4}$

2	4, 8
2	2, 4
2	1, 2
	1, 1

$\frac{51}{8}-\frac{15}{4}$

LCM of 8 and $4=8$

$\frac{51}{8},\frac{15\times2}{4\times2}=\frac{30}{8}$

$6\frac{3}{8}-3\frac{3}{4}=\frac{51}{8}-\frac{30}{8}=\frac{51-30}{8}=\frac{21}{8}=2\frac{5}{8}$

18. $8\frac{5}{6}-5\frac{5}{12}$

2	6, 12
2	3, 6
3	3, 3
	1, 1

$\frac{53}{6}-\frac{65}{12}$

LCM of 6 and $12=12$

$\frac{53\times2}{6\times2}=\frac{106}{12},\frac{65}{12}$

$8\frac{5}{6}-5\frac{5}{12}=\frac{106}{12}-\frac{65}{12}=\frac{106-65}{12}=\frac{41}{12}=3\frac{5}{12}$

19. $5\frac{3}{4}-2\frac{1}{8}$

2	4, 8
2	2, 4
2	1, 2
	1, 1

$\frac{23}{4}-\frac{17}{8}$

LCM of 4 and $8=8$

$\frac{23\times2}{4\times2}=\frac{46}{8},\frac{17}{8}$

$5\frac{3}{4}-2\frac{1}{8}=\frac{46}{8}-\frac{17}{8}=\frac{46-17}{8}=\frac{29}{8}=3\frac{5}{8}$

20. $6\frac{7}{8}-1\frac{3}{4}$

$\frac{55}{8}-\frac{7}{4}$

LCM of 8 and $4=8$

$\frac{55}{8},\frac{7\times2}{4\times2}=\frac{14}{8}$

$6\frac{7}{8}-1\frac{3}{4}=\frac{55}{8}-\frac{14}{8}=\frac{55-14}{8}=\frac{41}{8}=5\frac{1}{8}$

21. $3-2\frac{1}{8}$

$\frac{3}{1}-\frac{17}{8}$

LCM of 1 and $8=8$

$\frac{3\times8}{1\times8}=\frac{24}{8},\frac{17}{8}$

$3-2\frac{1}{8}=\frac{24}{8}-\frac{17}{8}=\frac{7}{8}$

22. $6-2\frac{6}{7}$

$\frac{6}{1}-\frac{20}{7}$

LCM of 1 and $7=7$

$\frac{6\times7}{1\times7}=\frac{42}{7},\frac{20}{7}$

$6-2\frac{6}{7}=\frac{42}{7}-\frac{20}{7}=\frac{22}{7}=3\frac{1}{7}$

22. $6-2\frac{6}{7}$

$\frac{6}{1}-\frac{20}{7}$

LCM of 1 and $7=7$

$\frac{6\times7}{1\times7}=\frac{42}{7},\frac{20}{7}$ $\Rightarrow 6-2\frac{6}{7}=\frac{42}{7}-\frac{20}{7}=\frac{22}{7}=3\frac{1}{7}$

23. $6\frac{2}{3}-1\frac{5}{9}$

$\frac{20}{3}-\frac{14}{9}$

3	3, 9
3	1, 3
	1, 1

LCM of 3 and $9=9$

$\frac{20\times3}{3\times3}=\frac{60}{9},\frac{14}{9}$ $\Rightarrow 6\frac{2}{3}-1\frac{5}{9}=\frac{60}{9}-\frac{14}{9}=\frac{46}{9}=5\frac{1}{9}$

24. $4-1\frac{1}{2}$

$\frac{4}{1}-\frac{3}{2}$

LCM of 1 and 2 = 2

$\frac{4\times2}{1\times2}=\frac{8}{2},\frac{3}{2}$ $\Rightarrow 4-1\frac{1}{2}=\frac{8}{2}-\frac{3}{2}=\frac{5}{2}=2\frac{1}{2}$

25. $6\frac{13}{24}-\frac{7}{8}$

$\frac{157}{24}-\frac{7}{8}$

2	24, 8
2	12, 4
2	6, 2
3	3, 1
	1, 1

LCM of 24 and 8 = 24

$\frac{157}{24},\frac{7\times3}{8\times3}=\frac{21}{24}$ $\Rightarrow 6\frac{13}{24}-\frac{7}{8}=\frac{157}{24}-\frac{21}{24}=\frac{136}{24}=\frac{17}{3}=5\frac{2}{3}$

26. $6-2\frac{2}{3}$

$\frac{6}{1}-\frac{8}{3}$

LCM of 1 and 3 = 3

$\frac{6\times3}{1\times3}=\frac{18}{3},\frac{8\times1}{3\times1}=\frac{8}{3}$

$6-2\frac{2}{3}=\frac{18}{3}-\frac{8}{3}=\frac{10}{3}$

$=3\frac{1}{3}$

27. $2\frac{3}{4}-1\frac{1}{7}$

$\frac{11}{4}-\frac{8}{7}$

LCM of 4 and 7 = 28

$\frac{11\times7}{4\times7}=\frac{77}{28},\frac{8\times4}{7\times4}=\frac{32}{28}$

$2\frac{3}{4}-1\frac{1}{7}=\frac{77}{28}-\frac{32}{28}=\frac{45}{28}$

$=1\frac{17}{28}$

28. $8\frac{1}{6}-2\frac{3}{4}$

$\frac{49}{6}-\frac{11}{4}$

2	6, 4
2	3, 2
3	3, 1
	1, 1

LCM of 6 and 4 = 12

$\frac{49\times2}{6\times2}=\frac{98}{12},\frac{11\times3}{4\times3}=\frac{33}{12}$ $\Rightarrow 8\frac{1}{6}-2\frac{3}{4}=\frac{98}{12}-\frac{33}{12}=\frac{65}{12}=5\frac{5}{12}$

29. $5\frac{1}{3}-3\frac{2}{9}$

$\frac{16}{3}-\frac{29}{9}$

3	3, 9
3	1, 3
	1, 1

LCM of 3 and 9 = 9

$\frac{16\times3}{3\times3}=\frac{48}{9},\frac{29}{9}$ $\Rightarrow 5\frac{1}{3}-3\frac{2}{9}=\frac{48}{9}-\frac{29}{9}=\frac{48-29}{9}=\frac{19}{9}=2\frac{1}{9}$

30. $10\frac{2}{3}-5\frac{1}{6}$

$\frac{32}{3}-\frac{31}{6}$

2	3, 6
3	3, 3
	1, 1

LCM of 3 and $6=6$

$\frac{32\times2}{3\times2}=\frac{64}{6}, \frac{31\times1}{6\times1}=\frac{31}{6}$

$10\frac{2}{3}-5\frac{1}{6}=\frac{64}{6}-\frac{31}{6}=\frac{64-31}{6}=\frac{33}{6}=\frac{11}{2}=5\frac{1}{2}$

Let Us Do-8L

1. $\frac{3}{7}+\frac{4}{7}-\frac{2}{7}=\frac{7-2}{7}=\frac{5}{7}$

2. $\frac{7}{11}-\frac{9}{11}+\frac{5}{11}=\frac{7-9+5}{11}=\frac{12-9}{11}=\frac{3}{11}$

3. $\frac{9}{12}-\frac{5}{8}+\frac{3}{6}$

2	12, 8, 6
2	6, 4, 3
2	3, 2, 3
3	3, 1, 3
	1, 1, 1

LCM of 12, 8 and $6=24$

$\frac{9\times2}{12\times2}=\frac{18}{24}, \frac{5\times3}{8\times3}=\frac{15}{24}, \frac{3\times4}{6\times4}=\frac{12}{24}$

$\frac{18}{24}-\frac{15}{24}+\frac{12}{24}=\frac{30-15}{24}=\frac{15}{24}=\frac{5}{8}$

4. $\frac{5}{9}+\frac{3}{2}-\frac{7}{12}$

2	9, 2, 12
2	9, 1, 6,
3	9, 1, 3
3	3, 1, 1
	1, 1, 1

LCM of 9, 2 and $12=36$

$\frac{5\times4}{9\times4}=\frac{20}{36}, \frac{3\times18}{2\times18}=\frac{54}{36},$

$\frac{7\times3}{12\times3}=\frac{21}{36}$

$\frac{20}{36}+\frac{54}{36}-\frac{21}{36}=\frac{74-21}{36}=\frac{53}{36}=1\frac{17}{36}$

5. $\frac{7}{16}-\frac{5}{12}+\frac{3}{8}$

2	16, 12, 8
2	8, 6, 4
2	4, 3, 2
2	2, 3, 1
3	1, 3, 1
	1, 1, 1

LCM of 16, 12 and $8=48$

$\frac{7\times3}{16\times3}=\frac{21}{48}, \frac{5\times4}{12\times4}=\frac{20}{48},$

$\frac{3\times6}{8\times6}=\frac{18}{48}$

$\frac{21}{48}-\frac{20}{48}+\frac{18}{48}=\frac{39}{48}-\frac{20}{48}=\frac{39-20}{48}=\frac{19}{48}$

6. $\frac{7}{9}-\frac{2}{3}+\frac{5}{6}$

2	9, 3, 6
3	9, 3, 3
3	3, 1, 1
	1, 1, 1

LCM of 9, 3 and 6=18

$\frac{7\times2}{9\times2}=\frac{14}{18}, \frac{2\times6}{3\times6}=\frac{12}{18}, \frac{5\times3}{6\times3}=\frac{15}{18}$

$\frac{14}{18}-\frac{12}{18}+\frac{15}{18}=\frac{29-12}{18}=\frac{17}{18}$

7. $\frac{1}{4}-\frac{1}{3}+\frac{7}{12}$

2	4, 3, 12
2	2, 3, 6
3	1, 3, 3
	1, 1, 1

LCM of 4, 3 and 12 = 12

$\frac{1\times3}{4\times3}=\frac{3}{12}, \frac{1\times4}{3\times4}=\frac{4}{12}, \frac{7\times1}{12\times1}=\frac{7}{12}$

$\frac{3}{12}-\frac{4}{12}+\frac{7}{12}=\frac{10-4}{12}=\frac{6}{12}=\frac{1}{2}$

8. $\frac{4}{9}-\frac{5}{12}+\frac{2}{8}$

2	9, 12, 8
2	9, 6, 4
2	9, 3, 2
3	9, 3, 1
3	3, 1, 1
	1, 1, 1

LCM 9, 12 and 8 = 72

$\frac{4\times8}{9\times8}=\frac{32}{72}, \frac{5\times6}{12\times6}=\frac{30}{72}, \frac{2\times9}{8\times9}=\frac{18}{72}$

$\frac{32}{72}-\frac{30}{72}+\frac{18}{72}=\frac{50-30}{72}=\frac{20}{72}=\frac{5}{18}$

9. $\frac{3}{8}+\frac{3}{4}-\frac{5}{6}$

2	8, 4, 6
2	4, 2, 3
2	2, 1, 3
3	1, 1, 3
	1, 1, 1

LCM of 8, 4 and 6 = 24

$\frac{3\times3}{8\times3}=\frac{9}{24}, \frac{3\times6}{4\times6}=\frac{18}{24}, \frac{5\times4}{6\times4}=\frac{20}{24}$

$\frac{9}{24}+\frac{18}{24}-\frac{20}{24}=\frac{27-20}{24}=\frac{7}{24}$

10. $5\frac{1}{8}-2\frac{3}{4}+1\frac{5}{6}=\frac{41}{8}-\frac{11}{4}+\frac{11}{6}$

2	8, 4, 6
2	4, 2, 3
2	2, 1, 3
3	1, 1, 3
	1, 1, 1

LCM of 8, 4 and 6 = 24

$\frac{41\times3}{8\times3}=\frac{123}{24}, \frac{11\times6}{4\times6}=\frac{66}{24},$

$\frac{11\times4}{6\times4}=\frac{44}{24}$

$\frac{123}{24}-\frac{66}{24}+\frac{44}{24}=\frac{167-66}{24}=\frac{101}{24}=4\frac{5}{24}$

11. $4\frac{1}{3}-2\frac{3}{4}+5\frac{1}{6}$

$\frac{13}{3}-\frac{11}{4}+\frac{31}{6}$

2	3, 4, 6
2	3, 2, 3
3	3, 1, 3
	1, 1, 1

LCM of 3, 4 and 6 = 12

$\frac{13\times4}{3\times4}=\frac{52}{12}, \frac{11\times3}{4\times3}=\frac{33}{12}, \frac{31\times2}{6\times2}=\frac{62}{12}$

$\frac{52}{12}-\frac{33}{12}+\frac{62}{12}=\frac{114-33}{12}=\frac{81}{12}=\frac{27}{4}=6\frac{3}{4}$

12. $6\frac{5}{9}-3\frac{1}{3}+2\frac{1}{6}$

$\frac{59}{9}-\frac{10}{3}+\frac{13}{6}$

2	9, 3, 6
3	9, 3, 3
3	3, 1, 1
	1, 1, 1

LCM of 9, 3 and 6 = 18

$\frac{59\times2}{9\times2}=\frac{118}{18}, \frac{10\times6}{3\times6}=\frac{60}{18}, \frac{13\times3}{6\times3}=\frac{39}{18}$

$\frac{118}{18}-\frac{60}{18}+\frac{39}{18}=\frac{157-60}{18}=\frac{97}{18}=5\frac{7}{18}$

13. $7\frac{3}{4}-2\frac{1}{2}+2\frac{7}{8}$

$\frac{31}{4}-\frac{5}{2}+\frac{23}{8}$

2	4, 2, 8
2	2, 1, 4
2	1, 1, 2
	1, 1, 1

LCM of 4, 2 and 8 = 8

$\frac{31\times2}{4\times2}=\frac{62}{8}, \frac{5\times4}{2\times4}=\frac{20}{8}, \frac{23\times1}{8\times1}=\frac{23}{8}$

$\frac{62}{8}-\frac{20}{8}+\frac{23}{8}=\frac{85-20}{8}=\frac{65}{8}=8\frac{1}{8}$

14. $3\frac{3}{10}+1\frac{1}{15}-2\frac{1}{5}$

$\frac{33}{10}+\frac{16}{15}-\frac{11}{5}$

2	10, 15, 5
3	5, 15, 5
5	5, 5, 5
	1, 1, 1

LCM 10, 15 and $5=30$

$\frac{33\times3}{10\times3}=\frac{99}{30}, \frac{16\times2}{15\times2}=\frac{32}{30}, \frac{11\times6}{5\times6}=\frac{66}{30}$

$\frac{99}{30}+\frac{32}{30}-\frac{66}{30}=\frac{131-66}{30}=\frac{65}{30}=\frac{13}{6}=2\frac{1}{6}$

15. $3\frac{1}{5}-1\frac{1}{10}+2\frac{1}{4}$

$\frac{16}{5}-\frac{11}{10}+\frac{9}{4}$

2	5, 10, 4
2	5, 5, 2
5	5, 5, 1
	1, 1, 1

LCM of 5, 10 and $4=20$

$\frac{16\times4}{5\times4}=\frac{64}{20}, \frac{11\times2}{10\times2}=\frac{22}{20}, \frac{9\times5}{4\times5}=\frac{45}{20}$

$\frac{64}{20}-\frac{22}{20}+\frac{45}{20}=\frac{109-22}{20}=\frac{87}{20}=4\frac{7}{20}$

16. $10-4\frac{1}{5}-2\frac{3}{10}$

$\frac{10}{1}-\frac{21}{5}-\frac{23}{10}$

5	5, 10
2	1, 2
	1, 1

LCM of 1, 5 and $10=10$

$\frac{10\times10}{1\times10}=\frac{100}{10}, \frac{21\times2}{5\times2}=\frac{42}{10}, \frac{23\times1}{10\times1}=\frac{23}{10}$

$\frac{100}{10}-\frac{42}{10}-\frac{23}{10}=\frac{100-42-23}{10}$

$=\frac{100-65}{10}=\frac{35}{10}=\frac{7}{2}=3\frac{1}{2}$

17. $4\frac{5}{6}-7\frac{3}{8}+5\frac{1}{4}$

$\frac{29}{6}-\frac{59}{8}+\frac{21}{4}$

2	6, 8, 4
2	3, 4, 2
2	3, 2, 1
3	3, 1, 1
	1, 1, 1

LCM $=24$

$\frac{29\times4}{6\times4}=\frac{116}{24}, \frac{59\times3}{8\times3}=\frac{177}{24}, \frac{21\times6}{4\times6}=\frac{126}{24}$

$\frac{116}{24}-\frac{177}{24}+\frac{126}{24}=\frac{(126+116)-177}{24}$

$$\frac{242-117}{24}=\frac{65}{24}=2\frac{17}{24}$$

18. $6\frac{2}{3}+1\frac{5}{9}-5\frac{5}{6}$

$\frac{20}{3}+\frac{14}{9}-\frac{35}{6}$

2	3, 9, 6
3	3, 9, 3
3	1, 3, 1
	1, 1, 1

LCM $=18$

$\frac{20\times6}{3\times6}=\frac{120}{18}, \frac{14\times2}{9\times2}=\frac{28}{18}, \frac{35\times3}{6\times3}=\frac{105}{18}$

$\frac{120}{18}+\frac{28}{18}-\frac{105}{18}=\frac{(120+28)-105}{18}$

$\frac{148-105}{18}=\frac{43}{18}=2\frac{7}{18}$

19. $8\frac{1}{4}-5\frac{2}{5}+4\frac{1}{2}$

$\frac{33}{4}-\frac{27}{5}+\frac{9}{2}$

2	4, 5, 2
2	2, 5, 1
5	1, 5, 1
	1, 1, 1

LCM of 4, 5 and $2=20$

$\frac{33\times5}{4\times5}=\frac{165}{20}, \frac{27\times4}{5\times4}=\frac{108}{20}, \frac{9\times10}{2\times10}=\frac{90}{20}$

$\frac{165}{20}-\frac{108}{20}+\frac{90}{20}=\frac{(165+90)-108}{20}$

$\frac{255-108}{20}=\frac{147}{20}=7\frac{7}{20}$

20. $6\frac{1}{6}-2\frac{3}{8}+3\frac{5}{12}$

$\frac{37}{6}-\frac{19}{8}+\frac{41}{12}$

2	6, 8, 12
2	3, 4, 6
2	3, 2, 3
3	3, 1,3
	1, 1, 1

LCM of 6, 8 and $12=24$

$\frac{37\times4}{6\times4}=\frac{148}{24}, \frac{19\times3}{8\times3}=\frac{57}{24}, \frac{41\times2}{12\times2}=\frac{82}{24}$

$\frac{148}{24}-\frac{57}{24}+\frac{82}{24}=\frac{(148+82)-57}{24}$

$\frac{230-57}{24}=\frac{173}{24}=7\frac{5}{24}$

21. $\frac{3}{4}-\frac{2}{5}+\frac{3}{5}-\frac{1}{10}$

2	4, 5, 5, 10
2	2, 5, 5, 5
5	1, 5, 5, 5
	1, 1, 1, 1

LCM of 4, 5, 5 and $10 = 20$

$\frac{3\times5}{4\times5}=\frac{15}{20}, \frac{2\times4}{5\times4}=\frac{8}{20}, \frac{3\times4}{5\times4}=\frac{12}{20},$

$\frac{1\times2}{10\times2}=\frac{2}{20}, \frac{15}{20}-\frac{8}{20}+\frac{12}{20}-\frac{2}{20}$

$=\frac{(15+12)-(8+2)}{20}=\frac{27-10}{20}=\frac{17}{20}$

22. $\frac{4}{5}-\frac{3}{8}-\frac{2}{5}+\frac{7}{8}$

2	5, 8, 5, 8
2	5, 4, 5, 4
2	5, 2, 5, 2
5	5, 1, 5, 1
	1, 1, 1, 1

LCM of 5, 8, 5 and $8 = 40$

$\frac{4\times8}{5\times8}=\frac{32}{40}, \frac{3\times5}{8\times5}=\frac{15}{40},$

$\frac{2\times8}{5\times8}=\frac{16}{40}, \frac{7\times5}{8\times5}=\frac{35}{40}$

$\frac{32}{40}-\frac{15}{40}-\frac{16}{40}+\frac{35}{40}=\frac{(32+35)-(15+16)}{40}$

$=\frac{67-31}{40}=\frac{36}{40}=\frac{9}{10}$

23. $4\frac{1}{8}-2\frac{3}{4}-2\frac{1}{3}+1\frac{3}{8}$

$\frac{33}{8}-\frac{11}{4}-\frac{7}{3}+\frac{11}{8}$

2	8, 4, 3, 8
2	4, 2, 3, 4
2	2, 1, 3, 2
3	1, 1, 3, 1
	1, 1, 1, 1

LCM of 8, 4, 3 and $8 = 24$

$\frac{33\times3}{8\times3}=\frac{99}{24}, \frac{11\times6}{4\times6}=\frac{66}{24},$

$\frac{7\times8}{3\times8}=\frac{56}{24}, \frac{11\times3}{8\times3}=\frac{33}{24}$

$\frac{99}{24}-\frac{66}{24}-\frac{56}{24}+\frac{33}{24}$

$=\frac{(99+33)-(66+56)}{24}=\frac{132-122}{24}=\frac{10}{24}=\frac{5}{12}$

24. $7\frac{1}{8}-3\frac{3}{4}-4\frac{1}{2}+2\frac{9}{16}$

$\frac{57}{8}-\frac{15}{4}-\frac{9}{2}+\frac{41}{16}$

2	8, 4, 2, 16
2	4, 2, 1, 8
2	2, 1, 1, 4
2	1, 1, 1, 2
	1, 1, 1, 1

LCM of 8, 4, 2 and 16 = 16

$\frac{57\times2}{8\times2}=\frac{114}{16}, \frac{15\times4}{4\times4}=\frac{60}{16},$

$\frac{9\times8}{2\times8}=\frac{72}{16}, \frac{41\times1}{16\times1}=\frac{41}{16}$

$\frac{114}{16}-\frac{60}{16}-\frac{72}{16}+\frac{41}{16}=\frac{(114+41)-(60+72)}{16}$

$=\frac{155-132}{16}=\frac{23}{16}=1\frac{7}{16}.$

25. $6\frac{7}{12}-3-2\frac{5}{6}+3\frac{1}{3}$

$=\frac{155-132}{16}=\frac{23}{16}=1\frac{7}{16}$

$\frac{79}{12}-\frac{3}{1}-\frac{17}{6}+\frac{10}{3}$

2	12, 1, 6, 3
2	6, 1, 3, 3
3	3, 1, 3, 3
	1, 1, 1, 1

LCM of 12, 1, 6 and 3 = 12

$\frac{79}{12}, \frac{3\times12}{1\times12}=\frac{36}{12}, \frac{17\times2}{6\times2}=\frac{34}{12}, \frac{10\times4}{3\times4}=\frac{40}{12}$

$\frac{79}{12}-\frac{36}{12}-\frac{34}{12}+\frac{40}{12}=\frac{(79+40)-(36+34)}{12}=\frac{119-70}{12}$

$=\frac{49}{12}=4\frac{1}{12}$

26. $6+8\frac{1}{3}-5\frac{1}{7}-3 \Rightarrow \frac{6}{1}+\frac{25}{3}-\frac{36}{7}-\frac{3}{1}$

LCM of 1, 3, 7 and 1 = 21

$\frac{6\times21}{1\times21}=\frac{126}{21}, \frac{25\times7}{3\times7}=\frac{175}{21}, \frac{36\times3}{7\times3}=\frac{108}{21}, \frac{3\times21}{1\times21}=\frac{63}{21}$

$\frac{126}{21}+\frac{175}{21}-\frac{108}{21}-\frac{63}{21}=\frac{(126+175)-(108+63)}{21}$

$=\frac{130}{21}=6\frac{4}{21}=\frac{301-171}{21}=\frac{130}{21}=6\frac{4}{21}$

27. What must be added to $4\frac{1}{6}$ to make $6\frac{2}{9}$

Sum of two fractions $= 4\frac{1}{6} = \frac{25}{6}$

One of the fractions $= 6\frac{2}{9} = \frac{56}{9}$

2	6, 9
3	3, 9
3	1, 3
	1, 1

The fraction to be added

$$\frac{56}{9} - \frac{25}{6} = \frac{56 \times 2 - 25 \times 3}{18} = \frac{112 - 75}{18} = \frac{37}{18} = 2\frac{1}{18}$$

28. Sum of two fractions $= 7\frac{3}{4} = \frac{31}{4}$

one of the fractions $= 5\frac{1}{6} = \frac{31}{6}$

2	4, 6
2	2, 3
3	1, 3
	1, 1

the fraction to be subtracted $= \frac{31}{4} - \frac{31}{6}$

LCM of 4 and 6 $= 12$

$$\frac{31 \times 3 - 31 \times 2}{12} = \frac{93 - 62}{12} = \frac{31}{12} = 2\frac{7}{12}$$

29. Find the number which is $1\frac{3}{4}$ less then $7\frac{2}{3}$

$$= 7\frac{2}{3} = \frac{23}{3} = 1\frac{3}{4} = \frac{7}{4} = \frac{23}{3} - \frac{7}{4}$$

LCM of 3 and 4 $= 12$

$$\frac{23 \times 4 - 7 \times 3}{12} = \frac{92 - 21}{12} = \frac{71}{12} = 5\frac{11}{12}$$

30. Find the number which is $\frac{7}{9}$ less than $4\frac{1}{6}$

$$4\frac{1}{6} = \frac{25}{6} \Rightarrow \frac{7}{9} \Rightarrow \frac{25}{6} - \frac{7}{9}$$

LCM of 6 and 9 $= 18$

$$\frac{25 \times 3 - 7 \times 2}{18} = \frac{75 - 14}{18} = \frac{61}{18} = 3\frac{7}{18}$$

2	6, 9
3	3, 9
3	1, 3
	1, 1

Let Us Do-8M

1. $\frac{1}{3} \times 7 = \frac{1 \times 7}{3} = \frac{7}{3} = 2\frac{1}{3}$ **2.** $\frac{1}{2} \times 5 = \frac{1 \times 5}{2} = \frac{5}{2} = 2\frac{1}{2}$

3. $\frac{3}{4}\times 11=\frac{3\times 11}{4}=\frac{33}{4}=8\frac{1}{4}$ **4.** $\frac{3}{5}\times 6=\frac{3\times 6}{5}=\frac{18}{5}=3\frac{3}{5}$

5. $\frac{7}{8}\times 9=\frac{7\times 9}{8}=\frac{63}{8}=7\frac{7}{8}$ **6.** $\frac{5}{9}\times 8=\frac{5\times 8}{9}=\frac{40}{9}=4\frac{4}{9}$

7. $\frac{8}{17}\times 7=\frac{8\times 7}{17}=\frac{56}{17}=3\frac{5}{17}$ **8.** $\frac{7}{13}\times 9=\frac{7\times 9}{13}=\frac{63}{13}=4\frac{11}{13}$

9. $1\frac{1}{5}\times 7=\frac{6}{5}\times 7=\frac{6\times 7}{5}=\frac{42}{5}=8\frac{2}{5}$

10. $2\frac{3}{7}\times 9=\frac{17}{7}\times 9=\frac{17\times 9}{7}=\frac{153}{7}=21\frac{6}{7}$

11. $4\frac{11}{12}\times 5=\frac{59}{12}\times 5=\frac{59\times 5}{12}=\frac{295}{12}=24\frac{7}{12}$

12. $8\frac{9}{17}\times 9=\frac{145}{17}\times 9=\frac{145\times 9}{17}=\frac{1305}{17}=76\frac{13}{17}$

13. $7\frac{1}{11}\times 15=\frac{78}{11}\times 15=\frac{78\times 15}{11}=\frac{1170}{11}=106\frac{4}{11}$

14. $10\frac{1}{10}\times 8=\frac{101}{10}\times 8=\frac{101\times 8}{10}=\frac{808}{10}=\frac{404}{5}=80\frac{4}{5}$

15. $4\frac{5}{21}\times 8=\frac{89}{21}\times 8=\frac{89\times 8}{21}=\frac{712}{21}=33\frac{19}{21}$

16. $8\frac{1}{8}\times 9=\frac{65}{8}\times 9=\frac{65\times 9}{8}=\frac{585}{8}=73\frac{1}{8}$

17. $3\frac{5}{7}\times 4=\frac{26}{7}\times 4=\frac{26\times 4}{7}=\frac{104}{7}=14\frac{6}{7}$

18. $5\frac{1}{9}\times 5=\frac{46}{9}\times 5=\frac{46\times 5}{9}=\frac{230}{9}=25\frac{5}{9}$

Let Us Do-8N

1. $\frac{3}{5}\div 5$, The reciprocal of 5 is $\frac{3}{5}=\frac{3}{5}\times\frac{1}{5}=\frac{3}{25}$

2. $\frac{1}{2}\div 7=\frac{1}{2}\times\frac{1}{7}=\frac{1}{14}$ **3.** $\frac{1}{3}\div 6=\frac{1}{3}\times\frac{1}{6}=\frac{1}{18}$

4. $\frac{1}{5}\div 7=\frac{1}{5}\times\frac{1}{7}=\frac{1}{35}$ **5.** $\frac{1}{12}\div 5=\frac{1}{12}\times\frac{1}{5}=\frac{1}{60}$

6. $\frac{2}{5}\div 4=\frac{2}{5}\times\frac{1}{4}=\frac{2}{20}=\frac{1}{10}$ **7.** $\frac{11}{8}\div 4=\frac{11}{8}\times\frac{1}{4}=\frac{11}{32}$

8. $\frac{9}{11} \div 7 = \frac{9}{11} \times \frac{1}{7} = \frac{9}{77}$

9. $\frac{11}{13} \div 8 = \frac{11}{13} \times \frac{1}{8} = \frac{11}{104}$

10. $1\frac{1}{2} \div 5 = \frac{3}{2} \times \frac{1}{5} = \frac{3}{10}$

11. $1\frac{3}{4} \div 7 = \frac{7}{4} \times \frac{1}{7} = \frac{7}{28} = \frac{1}{4}$

12. $2\frac{1}{5} \div 9 = \frac{11}{5} \times \frac{1}{9} = \frac{11}{45}$

13. $4\frac{1}{7} \div 11 = \frac{29}{7} \times \frac{1}{11} = \frac{29}{77}$

14. $5\frac{2}{9} \div 7 = \frac{47}{9} \times \frac{1}{7} = \frac{47}{63}$

15. $7\frac{1}{10} \div 17 = \frac{71}{10} \times \frac{1}{17} = \frac{71}{170}$

16. $6\frac{5}{13} \div 15 = \frac{83}{13} \times \frac{1}{15} = \frac{83}{195}$

17. $15\frac{1}{7} \div 29 = \frac{106}{7} \times \frac{1}{29} = \frac{106}{203}$

18. $10\frac{1}{10} \div 10 = \frac{101}{10} \times \frac{1}{10} = \frac{101}{100}$

Decimal Fractions

Let Us Do-9A

1. $\frac{5}{10} = 0.5$

2. $\frac{4}{10} = 0.4$

3. $\frac{1}{10} = 0.1$

4. $\frac{25}{100} = 0.25$

5. $\frac{3}{100} = 0.03$

6. $\frac{86}{100} = 0.86$

7. $\frac{149}{1000} = 0.149$

8. $\frac{306}{1000} = 0.306$

9. $\frac{873}{1000} = 0.873$

10. $\frac{29}{1000} = 0.029$

11. $\frac{7}{1000} = 0.007$

12. $\frac{793}{1000} = 0.793$

13. point seven

14. point zero one

15. point six two

16. point seven three one

17. point nine six two

18. point zero zero three

19. point zero zero seven

20. point zero one four

21. two point one three

22. seven point zero one four

23. nine point zero four five

24. sixty six point six six

25. ten point eight zero four

26. nineteen point two four five.

27. seventy two point one zero four

28. one hundred eighty three point three two

29. point two zero six

30. point zero six four

31. $7\frac{1}{10} = 7 \times \frac{1}{10} = 7 + 0.1 = 7.1$

32. $22\frac{5}{100} = 22 + \frac{5}{100} = 22 + 0.05 = 22.05$

33. $81\frac{31}{100} = 81 + \frac{31}{100} = 81 + 0.31 = 81.31$

34. $53\frac{34}{100} = 53 + \frac{34}{100} = 53 + 0.34 = 53.34$

35. $\frac{7685}{100} = 76.85$ **36.** $38\frac{23}{100} = 38 + 0.23 = 38.23$

37. $10\frac{408}{1000} = 10 + 0.408 = 10.408$

38. $19\frac{1}{100} = 19 + 0.01 = 19.01$

39. $27\frac{104}{10000} = 27 + 0.0104 = 27.0104$

40. $91\frac{24}{1000} = 91 + 0.024 = 91.024$

41. $9\frac{4}{1000} = 9 + 0.04 = 9.004$ **42.** $1\frac{304}{1000} = 1 + 0.304 = 1.304$

43. $2.04 = 2 + .04 = 2\frac{4}{100}$ **44.** $34.43 = 34 + .43 = 34\frac{43}{100}$

45. $87.53 = 87 + .53 = 87\frac{53}{100}$

46. $128.125 = 128 + .125 = 128\frac{125}{1000}$

47. $8.004 = 8 + .004 = 8\frac{4}{1000}$ **48.** $39.105 = 39 + .105 = 39\frac{105}{1000}$

Let Us Do-9B

1. $0.27 = \frac{2}{10} + \frac{7}{100} = 0.2 + 0.07$ **2.** $0.38 = \frac{3}{10} + \frac{8}{100} = 0.3 + 0.08$

3. $0.78 = \frac{7}{10} + \frac{8}{100} = 0.7 + 0.08$ **4.** $0.61 = \frac{6}{10} + \frac{1}{100} = 0.6 + 0.01$

5. $0.72 = \frac{7}{10} + \frac{2}{100} = 0.7 + 0.02$ **6.** $0.24 = \frac{2}{10} + \frac{4}{100} = 0.2 + 0.04$

7. $0.15 = \frac{1}{10} + \frac{5}{100} = 0.1 + 0.05$ **8.** $0.97 = \frac{9}{10} + \frac{7}{100} = 0.9 + 0.07$

9. $0.67 = \frac{6}{10} + \frac{7}{100} = 0.6 + 0.07$

10. $0.86 = \frac{8}{10} + \frac{6}{100} = 0.8 + 0.06$

11. $0.123 = \frac{1}{10} + \frac{2}{100} + \frac{3}{1000} = 0.1 + 0.02 + 0.003;$

12. $0.029 = \frac{2}{100} + \frac{9}{1000} = 0.02 + 0.009$

13. $0.843 = \frac{8}{10} + \frac{4}{100} + \frac{3}{1000} = 0.8 + 0.04 + 0.003;$

14. $0.345 = \frac{3}{10} + \frac{4}{100} + \frac{5}{1000} = 0.3 + 0.04 + 0.005$

15. $0.406 = \frac{4}{10} + \frac{0}{100} + \frac{6}{1000} = 0.4 + 0.00 + 0.006;$

16. $0.705 = \frac{7}{10} + \frac{0}{100} + \frac{5}{1000} = 0.7 + 0.00 + 0.005$

17. $0.076 = \frac{0}{10} + \frac{7}{100} + \frac{6}{1000} = 0.0 + 0.07 + 0.006;$

18. $8.45 = 8 + \frac{4}{10} + \frac{5}{100} = 8 + 0.4 + 0.05$

19. $7.77 = 7 + \frac{7}{10} + \frac{7}{100} = 7 + 0.7 + 0.07;$

20. $8.888 = 8 + \frac{8}{10} + \frac{8}{100} + \frac{8}{1000} = 8 + 0.8 + 0.08 + 0.008$

21. $0.742 = \frac{7}{10} + \frac{4}{100} + \frac{2}{1000} = 0.7 + 0.04 + 0.002;$

22. $66.088 = 66 + \frac{0}{10} + \frac{8}{100} + \frac{8}{1000} = 66 + 0.0 + 0.08 + 0.008$

23. $142.539 = 142 + \frac{5}{10} + \frac{3}{100} + \frac{9}{1000} = 142 + 0.5 + 0.03 + 0.009$

24. $0.999 = \frac{9}{10} + \frac{9}{100} + \frac{9}{1000} = 0.9 + 0.09 + 0.009$

25. 0.2**5**

5 is at hundredths place

$\therefore$ place value of $5 = 5 \times \frac{1}{100} = \frac{5}{100} = 0.05$

26. 0.**8**2

8 is at tenths place

$\therefore$ place value of $8 = 8 \times \frac{1}{10} = \frac{8}{10} = 0.8$

27. 0.5**4**2

4 is at thousandths place

$\therefore$ place value of $4 = 4 \times \frac{1}{100} = \frac{4}{100} = 0.04$

28. 0.75**4**

4 is at thousandths place

$\therefore$ place value of $4 = 4 \times \frac{1}{1000} = \frac{4}{1000} = 0.004$

29. 0.**9**35

9 is at tenths place

$\therefore$ place value of $9 = 9 \times \frac{1}{10} = \frac{9}{10} = 0.9$

30. 0.7**6**9

6 is at hundredths place

$\therefore$ place value of $6 = 6 \times \frac{1}{100} = \frac{6}{100} = 0.06$

31. 0.**6**78

6 is at tenths this place

$\therefore$ place value of $6 = 6 \times \frac{1}{10} = \frac{6}{10} = 0.6$

32. 2.8**5**1

5 is at the hundredths place

$\therefore$ place value of $5 = 5 \times \frac{1}{100} = \frac{5}{100} = 0.05$

33. 0.90**6**

6 is at the thousandths place

$\therefore$ place value of $6 = 6 \times \frac{1}{1000} = \frac{6}{1000} = 0.006$

34. 0.**9**0**4**

9 is at the tenths place

$\therefore$ place value of $9 = 9 \times \frac{1}{10} = \frac{9}{10} = 0.9$

4 is at the thousandths place

$\therefore$ place value of $4 = 4 \times \frac{1}{1000} = 0.004$

35. **3**70.**8**30

3 is at the hundredths place

$\therefore$ palce value of $3 \times 100 = 300$

8 is at the tenths place

$\therefore$ place value of $8 = 8 \times \frac{1}{10} = \frac{8}{10} = 0.8$

36. 8**3**6.5**8**

3 is at the tenths place

$\therefore$ place value of $3 \times 10 = 30$

8 is at the hundredths place

$\therefore$ place value of $8 = 8 \times \frac{1}{100} = \frac{8}{100} = 0.08$

37. $\frac{3}{10} + \frac{7}{100} = 0.3 + 0.07 = 0.37$

38. $\frac{9}{10} + \frac{1}{100} = 0.9 + 0.01 = 0.91$

39. $\frac{3}{10} + \frac{9}{100} + \frac{1}{1000} = 0.3 + 0.09 + 0.001 = 0.391$

40. $\frac{2}{10} + \frac{5}{100} + \frac{3}{1000} = 0.2 + 0.05 + 0.003 = 0.253$

41. $\frac{4}{10} + \frac{1}{100} + \frac{9}{1000} = 0.4 + 0.01 + 0.009 = 0.419$

42. $\frac{5}{10} + \frac{5}{100} + \frac{5}{1000} = 0.5 + 0.05 + 0.005 = 0.555$

43. $0.35 = \frac{3}{10} + \frac{5}{100} = 0.3 + 0.05;$

$0.469 = \frac{4}{10} + \frac{6}{100} + \frac{9}{1000} = 0.4 + 0.06 + 0.009$

$$3.145 = 3 + \frac{1}{10} + \frac{4}{100} + \frac{5}{1000} = 3 + 0.1 + 0.04 + 0.005$$

$$42.605 = 40 + 2 + \frac{6}{10} + \frac{5}{1000} = 40 + 2 + 0.6 + 0.005$$

$$89.056 = 80 + 9 + \frac{5}{100} + \frac{6}{1000} = 80 + 9 + 0.05 + 0.006$$

$$7.006 = 7 + \frac{6}{1000} = 7 + 0.006$$

$$23.189 = 20 + 3 + \frac{1}{10} + \frac{8}{100} + \frac{9}{1000}$$

$$= 20 + 3 + 0.1 + 0.08 + 0.009$$

Place value chart

Number	Tens	Ones	Decimal	Tenths	Hundredths	Thousandths
0.35			.	3	5	
0.469			.	4	6	9
3.145		3	.	1	4	5
42.605	4	2	.	6	0	5
89.056	8	9	.	0	5	6
7.006		7	.	0	0	6
23.189	2	3	.	1	8	9

Let Us Do-9C

1. 0.4, 0.74 $\Rightarrow$ like decimal = 0.40, 0.74
2. 6.45, 0.789 $\Rightarrow$ like decimal = 6.450, 0.789
3. 15.4, 19.35, 34.234
4. 0.925, 6.5, 8.01
   like decimal = 15.400, 19.350, 34.234
   like decimal = 0.925, 6.500, 8.010
5. 6.78, 31.714, 0.08
6. 9.8, 0.320, 51.341
   like decimal = 6.780, 31.714, 0.080
   like decimal = 9.800, 0.320, 51.341

7. < ; **8.** < ; **9.** < ; **10.** = ; **11.** < ; **12.** > ;
13. < ; **14.** = ; **15.** > ; **16.** < ; **17.** < ;
18. > ; **19.** > ; **20.** > ; **21.** > ; **22.** = ; **23.** > ; **24.** <
25. 0.8,0.03,0.12 and 0.6
$\Rightarrow$ 0.800, 0.030, 0.120, 0.600
$\Rightarrow$ 0.8 > 0.6 > 0.12 > 0.03
26. 0.6,0.39,0.28,0.43 and 0.61 $\Rightarrow$ 0.60, 0.39, 0.28, 0.43, 0.61
$\Rightarrow$ 0.61 > 0.60 > 0.43 > 0.39 > 0.28
27. 0.3,0.51,0.23 and 0.2 $\Rightarrow$ 0.30, 0.51, 0.23, 0.20
$\Rightarrow$ 0.51 > 0.30 > 0.23 > 0.20
28. 0.6,0.68,0.61,0.81 and 0.685
$\Rightarrow$ 0.600, 0.680, 0.610, 0.810, 0.685
$\Rightarrow$ 0.810 > 0.685 > 0.680 > 0.610 > 0.600
29. 0.425,0.524,0.452 and 0.5
$\Rightarrow$ 0.425, 0.524, 0.452, 0.500
$\Rightarrow$ 0.524 > 0.500 > 0.452 > 0.425
30. 3.8,3.54,3.86and 3.68 $\Rightarrow$ 3.80, 3.54, 3.86, 3.68
$\Rightarrow$ 3.86 > 3.80 > 3.68 > 3.54
31. 0.12, 0.53, 0.69 and 0.23 $\Rightarrow$ 0.12 < 0.23 < 0.53 < 0.69
32. 0.4, 0.8, 0.6, 0.7 and 0.2 $\Rightarrow$ 0.2 < 0.4 < 0.6 < 0.7 < 0.8
33. 0.83, 0.75, 0.91 and 0.48 $\Rightarrow$ 0.48 < 0.75 < 0.83 < 0.91
34. 0.76, 0.67, 0.57 and 0.75 $\Rightarrow$ 0.57 < 0.67 < 0.75 < 0.76
35. 3.3, 3.33, 33.3 and 33.31 $\Rightarrow$ 3.3 < 3.33 < 33.3 < 33.31
36. 0.87, 0.8, 0.82 and 0.082 $\Rightarrow$ 0.082 < 0.800 < 0.820 < 0.870

Let Us Do-9D

1.
$$\begin{array}{r} 0.1 \\ +\,0.3 \\ \hline 0.4 \end{array}$$

2.
$$\begin{array}{r} 0.5 \\ +\,0.2 \\ \hline 0.7 \end{array}$$

3.
$$\begin{array}{r} 0.6 \\ +\,0.1 \\ \hline 0.7 \end{array}$$

4.
$$\begin{array}{r} 0.8 \\ +\,0.7 \\ \hline 1.5 \end{array}$$

5.
$$\begin{array}{r} 0.35 \\ +\,0.26 \\ \hline 0.61 \end{array}$$

6.
$$\begin{array}{r} 0.75 \\ +\,0.08 \\ \hline 0.83 \end{array}$$

7.
$$\begin{array}{r} 0.96 \\ +\,0.25 \\ \hline 1.21 \end{array}$$

8.
$$\begin{array}{r} 0.87 \\ +\,0.78 \\ \hline 1.65 \end{array}$$

9. 0.40 + 0.97 = 1.37

10. 0.83 + 0.38 = 1.21

11. 8.32 + 6.75 = 15.07

12. 3.97 + 11.79 = 15.76

13. 8.04 + 26.69 = 34.73

14. 7.381 + 9.210 = 16.591

15. 15.496 + 36.784 = 52.280

16. 12.68 + 91.64 + 4.97 = 109.29

17. 8.76 + 9.58 + 11.60 = 29.94

18. 21.80 + 19.85 + 12.67 = 54.32

19. 153.647 + 74.709 + 434.135 = 662.491

20. 81.789 + 16.567 + 4.006 = 102.362

21. 89.290 + 14.690 + 73.635 = 177.615

22. 68.450 + 97.800 + 18.953 = 185.203

23. 7.80 + 29.78 + 641.90 + 0.67 = 680.15

24. 91.178 + 56.700 + 32.050 + 41.800 = 221.728

Let Us Do-9E

1. 0.8 − 0.6 = 0.2

2. 0.9 − 0.5 = 0.4

3. 2.4 − 0.9 = 1.5

4. 3.48 − 1.37 = 2.11

5. 3.21 − 1.90 = 1.31

6. 28.67 − 19.79 = 08.88

7. 54.38 − 37.96 = 16.42

8. 64.23 − 37.67 = 26.56

9. 87.01 − 39.97 = 47.04

10. 100.00 − 79.89 = 20.11

11. 58.789 − 32.126 = 26.663

12. 65.325 − 48.978 = 16.347

13. 287.003 − 239.769 = 47.234

14. 652.403 − 497.979 = 154.424

15. 784.000 − 691.878 = 092.122

16.
$$\begin{array}{r} 35.30 \\ -27.17 \\ \hline 08.13 \end{array}$$

17.
$$\begin{array}{r} 49.13 \\ -45.65 \\ \hline 03.48 \end{array}$$

18.
$$\begin{array}{r} 60.50 \\ -36.33 \\ \hline 24.17 \end{array}$$

19.
$$\begin{array}{r} 70.00 \\ -46.10 \\ \hline 23.90 \end{array}$$

20.
$$\begin{array}{r} 125.417 \\ -98.500 \\ \hline 26.917 \end{array}$$

21.
$$\begin{array}{r} 70.007 \\ -46.100 \\ \hline 23.907 \end{array}$$

22.
$$\begin{array}{r} 900.000 \\ -436.312 \\ \hline 463.688 \end{array}$$

23.
$$\begin{array}{r} 503.042 \\ -246.300 \\ \hline 256.742 \end{array}$$

24.
$$\begin{array}{r} 336.03 \\ -279.80 \\ \hline 56.23 \end{array}$$

25.
$$\begin{array}{r} 500.00 \\ -237.63 \\ \hline 262.37 \end{array}$$

26.
$$\begin{array}{r} 79.280 \\ +76.700 \\ \hline 155.980 \\ -142.301 \\ \hline 13.679 \end{array}$$

27.
$$\begin{array}{r} 231.030 \\ -112.800 \\ \hline 118.230 \\ -62.394 \\ \hline 55.836 \end{array}$$

28.
$$\begin{array}{r} 312.60 \\ -189.18 \\ \hline 123.42 \\ +28.27 \\ \hline 151.69 \\ -39.50 \\ \hline 112.19 \end{array}$$

29.
$$\begin{array}{r} 130.500 \\ -72.380 \\ \hline 58.120 \\ +57.450 \\ \hline 115.570 \\ -39.863 \\ \hline 75.707 \end{array}$$

Let Us Do-9F

1. $\frac{2}{5} = 0.4$ **2.** $\frac{7}{25} = 0.28$ **3.** $\frac{8}{20} = 0.4$

4. $\frac{11}{20} = 0.55$ **5.** $\frac{12}{50} = 0.24$ **6.** $\frac{3}{5} = 0.6$

7. $\frac{13}{2} = 6.5$ **8.** $\frac{321}{100} = 3.21$ **9.** $\frac{23}{4} = 5.75$

10. $\frac{17}{5} = 3.4$ **11.** $\frac{129}{20} = 6.45$ **12.** $\frac{301}{25} = 12.04$

13. $\frac{67}{4} = 16.75$ **14.** $\frac{121}{8} = 15.125$ **15.** $\frac{17}{50} = 0.34$

16. $\frac{13}{20} = 0.65$ **17.** $\frac{7}{8} = 0.875$ **18.** $\frac{44}{125} = 0.352$

19. $\frac{68}{125} = 0.544$ **20.** $\frac{13}{125} = 0.104$ **21.** $\frac{111}{500} = 0.222$

Let Us Do-9G

1. $.5 = \frac{5}{10} = \frac{1}{2}$ **2.** $.7 = \frac{7}{10}$ **3.** $.3 = \frac{3}{10}$

4. $.11 = \frac{11}{100}$ **5.** $.06 = \frac{6}{100} = \frac{3}{50}$ **6.** $.01 = \frac{1}{100}$

7. $.25 = \frac{25}{100} = \frac{1}{4}$ **8.** $.05 = \frac{5}{100} = \frac{1}{20}$ **9.** $.75 = \frac{75}{100} = \frac{3}{4}$

10. $.95 = \frac{95}{100} = \frac{19}{20}$ **11.** $.35 = \frac{35}{100} = \frac{7}{20}$ **12.** $.67 = \frac{67}{100}$

13. $.215 = \frac{215}{1000} = \frac{43}{200}$ **14.** $.123 = \frac{123}{1000}$ **15.** $.105 = \frac{105}{1000} = \frac{21}{200}$

16. $.109 = \frac{109}{1000}$ **17.** $.019 = \frac{19}{1000}$ **18.** $.53 = \frac{53}{100}$

19. $6.05 = 6 + 0.5 = 6 + \frac{5}{100} = 6\frac{5}{100}$

20. $2.3 = 2 + 0.3 = 2 + \frac{3}{10} = 2\frac{3}{10}$

21. $14.125 = 14 + .125 = 14 + \frac{125}{1000} = 14 + \frac{1}{8} = 14\frac{1}{8}$

22. $26.25 = 26 + .25 = 26 + \frac{25}{100} = 26 + \frac{1}{4} = 26\frac{1}{4}$

23. $7.5 = 7 + 0.5 = 7 + \frac{5}{10} = 7 + \frac{1}{2} = 7\frac{1}{2}$

24. $76.36 = 76 + 0.36 = 76 + \frac{36}{100} = 76 + \frac{9}{25} = 76\frac{9}{25}$

Money

Let Us Do-10A

1. ₹ 55.65 = 55 rupees 65 paise

2. ₹ 69.70 = 69 rupees 70 paise
3. ₹ 463.55 = 463 rupees 55 paise
4. ₹ 1697.25 = 1697 rupees 25 paise
5. ₹ 3796.45 = 3796 rupees 45 paise
6. ₹ 47676.75 = 47676 rupees 75 paise
7. 25 rupees 5 paise = ₹ 25.05
8. 49 rupees 65 paise = ₹ 49.65
9. 374 rupees 7 paise = ₹ 374.07
10. 5676 rupees 65 paise = ₹ 5676.65
11. 1677 rupees 35 paise = ₹ 1677.35
12. 1979 rupees 42 paise = ₹ 1979.42
13. ₹ 32.06 = Thirty two rupees and six paise.
14. ₹ 479.65 = Four hundred seventy nine rupees and sixty five paise.
15. ₹ 976.32 = Nine hundred seventy six rupees and thirty two paise.
16. ₹ 1645.07 = One thousand six hundred fourty five rupees and seven paise.
17. ₹ 3965.65 = Three thousand nine hundred sixty five rupees and sixty five paise.
18. ₹ 2869.79 = Two thousand eight hundred sixty nine rupees and seventy nine paise.

Let Us Do-10B

1. (a) ₹ 8.65 = 865 paise; (b) ₹ 64.75 = 6475 paise;
   (c) ₹ 326.33 = 32633 paise; (d) ₹ 456.55= 45655 paise;
   (e) ₹ 1292.32 = 129232 paise; (f) ₹ 7625.27= 762527 paise;
   (g) ₹ 7979.63 = 797963 paise; (h) ₹ 8537.77 = 853777 paise;
   (i) ₹ 4397.00 = 439700 paise; (j) ₹ 7237.56 = 723756 paise;
   (k) ₹ 6522.24 = 652224 paise; (l) ₹ 7325.46 = 732546 paise
2. (a) 405 P = ₹ 4.05 or 4 rupees and 5 paise.
   (b) 3155 P = ₹ 31.55 or 31 rupees and 55 paise.
   (c) 79111 P = ₹ 791.11 or 791 rupees and 11 paise.
   (d) 25252 P = ₹ 252.52 or 252 rupees and 52 paise.
   (e) 76695 P = ₹ 766.95 or 766 rupees and 95 paise.

(f) 961895 P = ₹ 9618.95 or 9618 rupees and 95 paise.
(g) 754635 P = ₹ 7546.35 or 7546 rupees and 35 paise.
(h) 926592 P = ₹ 9265.92 or 9265 rupees and 92 paise.
(i) 943254 P = ₹ 9432.54 or 9432 rupees and 54 paise.
(j) 439765 P = ₹ 4397.65 or 4397 rupees and 65 paise.
(k) 7642932 P = ₹ 76429.32 or 76429 rupees and 32 paise.
(l) 6532542 P = ₹ 65325.42 or 65325 rupees and 42 paise.

Let Us Do-10C

1.

₹	P.
85	40
45	60
+20	75
151.	75

2.

₹	P.
225	25
60	40
+175	50
461.	15

3.

₹	P.
1345	70
1030	20
+195	35
2571.	25

4.

₹	P.
2550	70
1655	25
+945	80
5151.	75

5.

₹	P.
350	00
90	80
+785	10
1225.	90

6.

₹	P.
2560	20
375	70
+8540	50
11476.	40

7.

₹	P.
540	50
185	25
+90	00
815.	75

8.

₹	P.
8240	20
5170	75
+9520	25
22931.	20

9.

₹	P.
4705	35
485	30
+4170	70
9361.	35

10.

₹	P.
12580	60
195	70
+15870	80
28647	10

Let Us Do-10D

1.
₹ 987.37
– ₹ 479.35
₹ 508.02

2.
₹ 3156.08
– ₹ 2148.30
₹ 1007.78

3.
₹ 6325.57
– ₹ 4569.82
₹ 1755.75

4. ₹ 4985.85
– ₹ 3766.96
₹ 1218.89

5. ₹ 47367.55
– ₹ 29896.69
₹ 17470.86

6. ₹ 59176.05
– ₹ 47689.95
₹ 11486.10

7. ₹ 67210.15
– ₹ 59999.99
₹ 07210.16

8. ₹ 55111.11
– ₹ 49797.69
₹ 05313.42

9. ₹ 2500.00
– ₹ 1383.76
₹ 1116.24

10. ₹ 39367.05
– ₹ 29296.95
₹ 10070.10

11. ₹ 17695.05
– ₹ 9899.76
₹ 7795.29

12. ₹ 7207.35
– ₹ 6197.65
₹ 1009.70

13. ₹ 19715.43
– ₹ 16999.97
₹ 02715.46

14. ₹ 54111.00
– ₹ 47397.06
₹ 06713.94

15. ₹ 99977.00
– ₹ 88999.06
₹ 10977.94

16. ₹ 75111.11
– ₹ 65696.69
₹ 09414.42

Let Us Do-10E

1. ₹ 29.57
× 9
₹ 266.13

2. ₹ 37.84
× 8
₹ 302.72

3. ₹ 189.70
× 11
₹ 2086.70

4. ₹ 281.75
× 12
₹ 3381.00

5. ₹ 614.53
× 13
₹ 7988.89

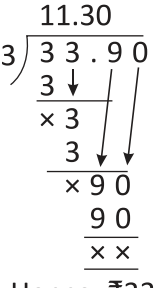
6. ₹ 850.65
× 9
₹ 7655.85

7. ₹ 768.58
× 15
3842.90
+7685.8×
11528.70

8. ₹ 902.65
×14
3610.60
+ 9026.5×
12637.10

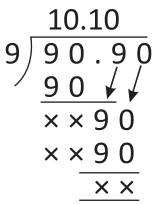
Let Us Do-10F

1.



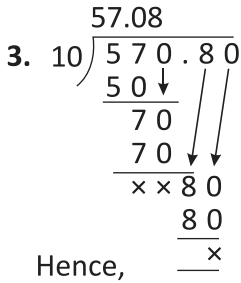
Hence, ₹33.90 ÷ 3 = 11.30

2.



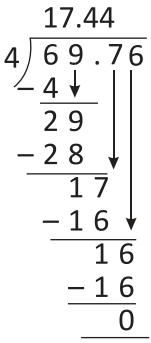
Hence, ₹90.90 ÷ 9 = 10.10

3.



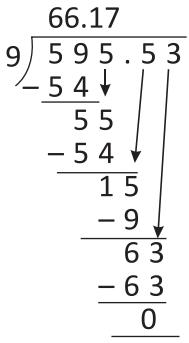
Hence, ₹570.80 ÷ 10 = 57.08

4.



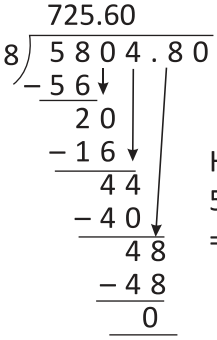
Hence, 69.76 ÷ 4 = 17.44

5.



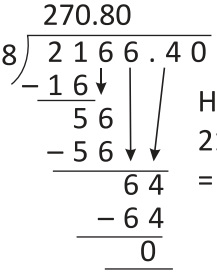
Hence, 595.53 ÷ 9 = 66.17

6.



Hence, 5804.80 ÷ 8 = 725.60

7.



Hence, 2166.40 ÷ 8 = 270.80

8.

```
      1304.40
   6 ) 7826.40
     - 6
       ---
       18
     - 18
       ---
        26
      - 24
        ---
         24
       - 24
         ---
          0
```

Hence,
7826.40 ÷ 6
= 1304.40

Let Us Do-10G

1.

Cost of, vegetables = ₹627.65
fruits = ₹948.75
cheese = +₹234.60
So, Mrs. verma pay for these items = ₹1811.00

2.

cost of chain = ₹4278.45
ribbon = ₹ 672.35
bangles = +₹6270.50
So, Kavita spent total money = 11221.30

3.

Cost of TV set = ₹6350.00
scooter = ₹7675.40
fan = +₹ 895.70
Total cost = ₹14921.10

4.

Cost of refrigerator = ₹12395.70
steel almirah = ₹ 1795.35
microwave oven = +₹16795.40
So, the total money which he spend = 30986.45

5.

In Vinita's purse, money home = ₹2579.40
Cost of saree she bought = ₹645.56
cost of leather bag = +₹715.58
₹1361.14
₹2579.40
So, the money left in her purse = –₹1361.14
₹1218.26

6. Cost of pen = ₹ 625.40
tie = ₹ 703.90
book = + ₹ 449.95
So, Total cost = 1779.25

7. Cost of cold drinks = ₹ 917.75
biscuits = + ₹ 784.50
₹ 1702.25
left money with Renu = + ₹ 642.25
Renu's total money = ₹ 2344.50

8. Money with woman had = ₹ 4453.50
Cost of grocery = ₹ 2013.90
vegetables = ₹ 1115.50
spent conveyance = + ₹ 133.90
₹ 3263.30
– ₹ 4453.50
₹ 3263.30
left money with her – ₹ 1190.20

9. Cost of bread = ₹ 23.85
butter = ₹ 469.75
eggs = ₹ 323.39
cake = + ₹ 78.69
₹ 895.68

Saurabh gave the shopkeeper = ₹ 1000.00
– ₹ 895.68
₹ 104.32

10. The cost of one pencil is = ₹ 47.05
Hence the cost of 7 pencil = ₹ 47.05 × 7
= ₹ 329.35

11. Cost of a cap = ₹ 85.75
Hence, cost of 8 such caps = ₹ 85.75 × 8 = ₹ 686.00

12. Cost of apple = ₹ 86.25
Hence, cost of seven (7) apples = ₹ 86.25 × 7 = ₹ 603.75

13. Cost of one box crayon colours = ₹ 124.45
Hence, cost of 6 such boxes = ₹ 124.45 × 6
= ₹ 746.70

14. Cost of one packet biscuit = ₹ 6.20
So, cost of such 3 packet biscuits = ₹ 6.20 ×3
= ₹ 18.60
Cost of a mixture = ₹ 14.25
So, cost of such 5 packets mixture = ₹ 14.25 × 5
= ₹ 71.25
Total money = ₹ (18.60 + 71.25)
= ₹ 89.85

15. Cost of one kg sugar = ₹ 17.50
Hence, cost of 6 kgs sugar = ₹ 17.50 × 6
= ₹ 105.00

Unitary Method

Let Us Do-11A

1. Cost of one pen = ₹ 9
   so, the cost of 7 pens = 9 × 7 = ₹ 63
2. Cost of one chocolate = ₹ 7
   so, cost of such 11 chocolates = 11 × 7 = ₹ 77
3. Production of car in a day = 45
   so, the production of car in 20 days = 45 × 20 = ₹ 900
4. Distance cover by a train in one hour = 65 km
   so, it cover distance in 6 hours = 65 × 6 = 390 km
5. Cost of one metres cloth = ₹ 65
   so, cost of such 15 metres cloth = ₹ 65 × 15 = ₹ 975
6. Cost of one electric press = ₹ 575
   so, the cost of 9 electric presses = 575 × 9 = ₹ 5175
7. Cost of 17 books = ₹ 1105
   so, the cost of one book $= \frac{1105}{17}$ = ₹ 65
8. 16 truck carry weat = 3520 bags
   so, the no. of bags which carry one truck $= \frac{3520}{16}$ = 220 bags
9. Cost of 8 fans = ₹ 13480

so, the cost of one fan $= \frac{13480}{8} =$ ₹ 1685

10. A car cover distance in 25 hours = 2025 km

so, the car cover distance in one hours $= \frac{2025}{25} = 81$ km

11. Cost of 15 l milk = ₹ 165

so, the cost of 9 l milk $= \frac{165}{15} \times 9 =$ ₹ 99

12. Weight of 7 packets sugar = 21 kg

so, the weight of such 11 packet sugar = $\frac{21}{7} \times 11 = 33$ kg

13. Cost of 9 soap cakes = ₹36

so, the cost of one dozen soap-cakes $= \frac{36}{9} \times 12 =$ ₹48

14. The train covers distance in 7 hours = 1015 km

so, it covers distance in 18 hours $= \frac{1015}{7} \times 18$

$= 145 \times 18 = 2610$ km

15. Distance of scooter runs in 18 lt. petrol $= 432$ km

so, run in 27 lt.

$= \frac{432}{18} \times 27 = 24 \times 27 = 648$ km

Measures of Length, Mass and Capacity

Let Us Do-12A

1. (a) 11 m 5 cm

11 × 100 cm + 5 cm

1100 cm + 5 cm = 1105 cm

(b) 17 m 65 cm

17 × 100 cm + 65 cm

1700 cm + 65 cm = 1765 cm

(c) 5 dam 7 m

5 dam = 5 × 10 m (∵ 1 dam = 10m)

= 50 m

∴ 50 m + 7 m = 57 m

Hence, 57 × 100 cm = 5700 cm

(d) 10 dam 5 m
10 dam = 10 × 10 m (∵ 1 dam = 10m) = 100m
∴ 100 m + 5 m = 105 m
Hence, 105 × 100 cm = 10500 cm

(e) 15 dam 9 m
15 dam = 15 × 10 m = 150 m
⇒ 150 m + 9 m = 159 m
Hence, 159 × 100 cm = 15900 cm

2. (a) 14 km 19 m
14 × 1000 m + 19 m (∵ 1 km = 1000 m)
14000 m + 19 m
= 14019 m

(b) 25 km 37 m
25 × 1000 m + 37 m (∵ 1 km = 1000 m)
25000 m + 37 m = 25037 m

(c) 5 km 6 hm 7 dam [∵ 1 km = 1000 m
5 × 1000 m + 6 × 100 m + 7 × 10 m 1 hm = 100 m
5000 m + 600 m + 70 m = 5670 m 1 dam = 10 m]

(d) 9km 3hm 5dam
9 × 1000 + 3 × 100m + 5 × 10 m
9000 m + 300 m + 50 m
= 9350 m

(e) 10km 7hm 4dam
10 × 1000m + 7 × 100m + 4 × 10m
10000 m + 700 m + 40 m = 10740 m

3. (a) 4696 m
4 km 696 m
Note ∵ 1 km = 1000 m
∴ 4000 m + 696 m
4 km 696 m

(b) 3985 m
3 km 985 m
Note : ∵ 1 km = 1000 m
∴ 3000 m + 985 m
3 km 985 m

(c) 11485 m
11 km 485 m
Note : 1 km = 1000 m
11000 m + 485 m
= 11 km 485 m

(d) 15675 m
15 km 675 m
Note : 1 km = 1000 m
15000 m + 675 m
= 15 km 675 m

(e) 9795 m $\Rightarrow$ 9 km 795 m

Note : 1 km = 1000 m

$\Rightarrow$ 9000 m + 795 m = 9 km 795 m

4. (a) 705 cm

7 m 5 cm

Note ∵ 1m = 100 cm

∴ 700 cm 5 cm

= 7 m 5 cm

(b) 985 cm

9 m 85 cm

Note : 1m = 100 cm

∴ 900 cm + 85 cm

= 9 m 85 cm

(c) 1175 cm

11 m 75 cm

Note : 1 m = 100 cm

∴ 1100 cm + 75 cm

= 11 m 75 cm

(d) 1995 cm

19 m 95 cm

Note : 1 m = 100 cm

1900 cm + 95 cm

= 19 m 95 cm

(e) 3798 cm

37 m 98 cm

Note : 1 m = 100 cm

3700 cm + 98 cm = 37 m 98 cm

5. (a) 8954 m

8000 m + 900 m + 50 m + 4 m

8 km + 9 hm + 5 dam +4 m

= 8km 9hm 5dam 4m

(∵ 1000m = 1km, 100m = 1hm, 10m =1dam)

(b) 9576 m = 9000m +500m + 70m +6 m

= 9km + 5hm + 7 dam + 6m

= 9km 5hm 7 dam 6m

(∵ 1000m = 1km, 100m = 1hm, 10m =1dam)

(c) 11895 m

11000 m + 800 m + 90 m + 5 m

11 km + 8 hm + 9 dam + 5 m

= 11 km 8 hm 9 dam 5 m

(∵ 1000m = 1km, 100m = 1hm, 10m =1dam)

(d) 15754 m

15000 m + 700 m + 50 m + 4 m

15 km + 7 hm + 5 dam + 4 m

= 15 km 7 hm 5 dam 4 m

(e) 17835 m
17000 m + 800 m + 30 m + 5 m
17 km + 8 hm + 3 dam + 5 m
= 17 km 8 hm 3 dam 5 m

6. (a) 11595 mm = 11000 mm + 500 mm + 90 mm + 5 mm
= 11 × 1000 mm + 5 × 100 mm + 9 × 10 mm + 5 mm
= 11 m + 5 dm + 9 cm + 5 mm
= 11 m 5 dm 9 cm 5 mm
(∵ 1000 mm = 1m, 100mm = 1 dm, 10mm = 1 cm)

(b) 23976 mm = 23000 mm + 900 mm + 70 mm + 6 mm
= 23 × 1000 mm + 9 × 100 mm + 7 × 10 mm + 6 mm
= 23 m + 9 dm + 7 cm + 6 mm
= 23 m 9 dm 7 cm 6mm
(∵ 1000 mm = 1 m, 100 mm = 1 dm, 10 mm =1 cm)

(c) 35876 mm = 35000 mm + 800 mm + 70 mm + 6 mm
= 35 × 1000 mm + 8 × 100 mm + 7 × 10 mm + 6 mm
= 35 m + 8 dm + 7 cm + 6 mm
= 35 m 8 dm 7 cm 6 mm
(∵ 1000 mm = 1m, 100mm = 1 dm, 10 mm = 1 cm)

(d) 16986 mm = 16000 mm + 900 mm + 80 mm + 6 mm
= 16 × 1000 mm + 9 × 100 mm + 8 × 10 mm + 6 mm
= 16 m + 9 dm + 8 cm + 6 mm
= 16 m 9 dm 8 cm 6 mm
(∵ 1000 mm = 1m, 100mm = 1 dm, 10 mm = 1 cm)

(e) 17497 mm = 17000 mm + 400 mm + 90 mm + 7 mm
= 17 × 1000 mm + 4 × 100 mm + 9 × 10 mm + 7 mm
= 17 m + 4 dm + 9 cm + 7 mm
= 17 m 4 dm 9cm 7 mm
(∵ 1000 mm = 1 m, 100 mm = 1 dm, 10 mm = 1 cm)

7.

	m	cm
	13	78
+	10	56
	24 m	34 cm

Hence,
13m 78cm + 10m 56cm
=24m 34 cm

8.

	m	cm
	8	53
+	21	65
	30	18

Hence,
8m 53cm + 21m 65cm
= 30m 18 cm

9.

	m	cm
	12	5
+	21	3
	33	8

Hence,
12m 5cm + 21m 3cm
= 33m 8cm

10.

	dam	m	cm
	5	4	7
+	6	3	9
	11	8	6

Hence,
5dam 4m 7 cm + 6dam 3m 9cm
= 11 dam 8m 6cm

11.

	km	hm	dam
	7	3	7
+	7	8	6
	15	2	3

Hence, 7km 3hm 7dam + 7km 8hm 6 dam
= 15 km 2hm 3dam

12.

	km	m	cm
	8	44	42
+	6	44	06
	14	88	48

Hence,
8 km 44 m 42 cm + 6 km 44 m 6 cm
= 14 km 88 m 48 cm

13.

km	m	cm
17	512	44
41	145	45
+	66	25
58	724	14

Hence, 17km 512m 44cm
+ 41km 145m 45cm + 66m 25cm
= 58km 724m 14cm

14.

	km	m	cm
	19	200	45
	11	154	05
+	7	75	17
	37	429	67

Hence, 19km 200m 45cm + 11km 154m 5cm
+ 7km 75m 17 cm
= 30 km 354m 50cm
= 37 km 429m 67cm

15.

	m	dm	cm
	2	9	5
	7	9	4
+	11	5	3
	22	4	2

Hence, 2m 9dm 5cm + 7m 9dm 4cm
+ 11m 5dm 3cm
= 22m 4dm 2cm

16.

	km	m
	95	083
–	78	515
	16	568

17.

	km	m
	74	257
–	36	068
	38	189

18.

	m	dm	cm
	9	5	8
–	6	4	5
	3	1	3

19.

	dm	cm	mm
	8	7	3
–	5	4	8
	3	2	5

20.

	km	m	cm
	19	053	19
–	15	465	53
	3	587	66

21.

	km	m	cm
	35	040	00
–	28	347	87
	6	692	13

Let Us Do-12B

1. (a) 7 kg 65 g
7 × 1000 g + 65 g
7000 g + 65 g
7065 g (Note 1 kg = 1000 g)

(b) 4 kg 179 g
4 × 1000 + 179 g
4000 g + 179 g
4179 g (Note 1 kg = 1000 g)

(c) 5 kg 6 hg 7dag 8 g
5 × 1000g + 6 × 100g + 7 × 10g + 8g
5000g + 600g + 70g + 8g + 5678 g
(Note 1 kg = 1000g, 1 hg = 100g, 1 dag = 10g)

(d) 8kg 9hg 8dag 5g
8 × 1000g + 9 × 100g + 8 × 10g + 5g
8000g + 900g +80g + 5g
8985g (Note 1 kg = 1000g, 1 hg = 100g, 1 dag = 10g)

2. (a) 6786 g
6000g + 700g + 80g + 6g
6kg + 7hg + 8dag + 6g
∴ 6kg 7hg 8dag 6g

(b) 18649g
18000g + 600g + 40g + 9g
18 kg + 6hg + 4dag + 9g
∴ 18kg 6hg 4dag 9g

(c) 25486 g
25000g + 400g + 80g + 6g
25kg + 4hg + 8dag + 6g = 25kg 4hg 8dag 6g

(d) 37069 g
37000g + 000g + 60g + 9g
37kg + 6 dag + 9g = 37kg 6 dag 9 g

(e) 19006 g
19000 g + 6 g
19 kg + 6 g = 19 kg 6 g

(f) 33986 g
33000 g + 900 g + 80 g + 6 g
33 kg + 9 hg + 8 dag + 6 g
= 33 kg 9 hg 8 dag 6 g

3. (a) 2794 mg
2000 mg + 700mg + 90mg + 4mg
2g + 7dg + 9cg + 4mg
∴ 2g 7dg 9cg 4mg

(b) 3867 mg
3000mg + 800mg + 60mg + 7mg
3g + 8dg + 6cg + 7mg
∴ 3g 8dg 6cg 7mg

(c) 6706 mg
6000 mg + 700 mg + 6 mg
6 g + 7 dg + 6 mg = 6 g 7 dg 6 mg

(d) 9967 mg
9000 mg + 900 mg + 60 mg + 7 mg
9 g + 9 dg + 6 cg + 7 mg
9g 9dg 6cg 7mg

(e) 8907 mg
8000 mg + 900 mg + 7 mg
8 g + 9 dg + 7 mg
8g 9dg 7mg

(f) 9087 mg
9000 mg + 80 mg + 7mg
9g + 8cg + 7mg
9g 8cg 7mg

4. (a)

	kg	g
	6	750
+	8	84
	14	834

Hence,
6kg 750g + 8kg 84g
= 14kg 834g

(b)

	kg	g
	96	5
+	72	18
	168	23

Hence,
96kg 5g + 72kg 8g
= 168kg 23g

5.

	kg	g
	36	664
+	79	874
	116	538

So, 116kg 538g

6.

	kg	g
	20	765
	10	675
+	30	085
	61	525

So, 61kg 525g

7.

	kg	g
	268	760
	142	650
+	79	480
	490	890

So, 490kg 890g

8.

	kg	g
	430	090
	68	160
+	7	009
	505	259

So, 505kg 259g

9.

	kg	hg	dag	g
	3	6	7	2
+	4	0	9	8
	7	7	7	0

So, 7kg 7hg 7dag 0 g

10.

	kg	hg	dag	g
	4	5	3	8
+	7	8	9	3
	12	4	3	1

So, 12kg 4hg 3dag 1g

11.

kg	hg	dag	g
6	9	8	7
+ 7	8	6	9
14	8	5	6

So, 14kg 8hg 5dag 6g

12.

kg	hg	dag	g
2	3	9	8
+ 8	2	3	9
10	6	3	7

So, 10kg 6hg 3dag 7g

13.

kg	g
19	435
– 13	126
6	309

So, 6kg 309 g

14.

kg	g
	1054
95	~~0~~54
– 74	135
20	919

So, 20kg 919g

(**Note :** 1kg = 1000g
1000 + 54g = 1054 g)

15.

kg	g
	1005
431	~~0~~05
– 301	125
129	880

So, 129kg 880g

(**Note :** 1kg = 1000g
1000 + 5g = 1005 g)

16.

kg	g
289	154
– 189	295
099	859

So, 099kg 859g

17.

kg	hg	dag	g
6	5	4	3
– 5	0	3	9
1	5	0	4

So, 1kg 5hg 0dag 4g

18.

kg	hg	dag	g
7	8	6	9
– 6	4	7	9
1	3	9	0

So, 1kg 3hg 9dag 0g

19.

kg	hg	dag	g
9	7	0	8
– 7	9	8	6
1	7	2	2

So, 1kg 7hg 2dag 2g

20.

kg	hg	dag	g
8	9	0	7
– 6	4	9	8
2	4	0	9

So, 2kg 4hg 0dag 9g

Let Us Do-12C

1. (a) 2k/ 138 /
2 × 1000 / + 138 /
2000 / + 138 /
2138 /
(Note : 1 k/ = 1000 /)

(b) 9 k/ 45 /
9 × 1000 / + 45 /
9000 / + 45 /
9045 /
(Note : 1 k/ = 1000 /)

(c) 6 k/ 9 h/ 7 /
6 × 1000 / + 9 × 100 / + 7 /
6000 / + 900 / + 7 / = 6907 /
(Note : 1 k/ = 1000 /, 1h/ = 100 /)

(d) 3h/ 5dal 9/
3 × 100 / + 5 × 10 / + 9 /
300 / + 50 / + 9 /
359 / (Note : 1 h/ = 100 /, 1 dal = 10 /)

(e) 11 k/ 9 h/ 7 dal 5 /
11 × 1000 / + 9 × 100 / + 7 × 10 / + 5 /
11000 / + 900 / + 70 / + 5 / = 11975 /

(f) 12 k/ 7dal 9 /
12 × 1000 / + 7 × 10 / + 9 /
12000 / + 70 / + 9 / = 12079 /

(g) 13 k/ 5dal 7 /
13 × 1000 / + 5 × 10 / + 7 /
13000 / + 50 / + 7 / = 13057 /

(h) 5 h/ 9 dal 2 /
5 × 100 / + 9 × 10 / + 2 /
500 / + 90 / + 2 /
592 /

(i) 8 k/ 9 h/ 7 /
8 × 1000 / + 9 × 100 / + 7 /
8000 / + 900 / + 7 /
8907 /

(j) 6 k/ 5 h/ 9 /
6 × 1000 / + 5 × 100 / + 9 /
6000 / + 500 / + 9 / = 6509 /

(k) 9 h/ 7 dal 5 /
9 × 100 / + 7 × 10 / + 5 /
900 / + 70 / + 5 / = 975 /

(l) 5 k/ 7 dal 7 /
= 5 × 1000 / + 7 × 10 / + 7 /
= 5000 / + 70 / + 7 / = 5077 /

2. (a) 4795 *l* = 4000 *l* + 700 *l* + 90 *l* + 5 *l*
= 4k*l* + 7h*l* + 9da*l* + 5 *l*
= 4 k*l* 7 h*l* 9dal 5*l*

(b) 8985 *l* = 8000 *l* + 900 *l* + 80 *l* + 5 *l*
= 8k*l* + 9h*l* + 8da*l* + 5*l*
= 8k*l* 9h*l* 8da*l* 5*l*

(Note : 1k*l* =1000*l*, 1h*l* = 100*l*, 1 dal = 10*l*)

(c) 3947 *l* = 3000 *l* + 900 *l* + 40 *l* + 7 *l*
= 3 k*l* + 9 h*l* + 4 dal + 7 *l*
= 3 k*l* 9 h*l* 4 dal 7 *l*

(d) 11897 *l* = 11000 *l* + 800 *l* + 90 *l* + 7 *l*
= 11 k*l* + 8 h*l* + 9dal + 7 *l*
= 11k*l* 8 h*l* 9 dal 7 *l*

(e) 9048 *l* = 9000 *l* + 40 *l* + 8 *l*
= 9 k*l* + 4 dal + 8 *l*
= 9 k*l* 4 dal 8 *l*

(f) 7605 *l* = 7000 *l* + 600 *l* + 5 *l*
= 7 k*l* + 6 h*l* + 5 *l*
= 7 k*l* 6 h*l* 5 *l*

3. (a) 9867 m*l*
9000 m*l* +800m*l* +60m*l* +7m*l*
9*l* + 8d*l* +6c*l* + 7m*l*
∴ 9*l* 8d*l* 6c*l* 7m*l*

(b) 8367m*l*
8000 m*l* + 300m*l* + 60 m*l* + 7m*l*
8 *l* + 3 d*l* + 6 c*l* + 7 m*l*
∴ 8 *l* 3d*l* 6 c*l* 7m*l*

(Note : 1 m*l* = 1000 m*l*, 1 d*l* = 100 m*l*, 1 c*l* = 10 m*l*)

(c) 7249 m*l* = 7000 m*l* + 200 m*l* + 40 m*l* + 9 m*l*
= 7 *l* + 2d*l* + 4c*l* + 9m*l*
= 7 *l* 2d*l* 4c*l* 9m*l*

(d) 7606 m*l* = 7000 m*l* + 600 m*l* + 6 m*l*
= 7 *l* + 6 d*l* + 6 m*l* = 7 *l* 6d*l* 6m*l*

(e) 9067 ml = 9000 m*l* + 60 m*l* + 7 m*l*
= 9 *l* + 6 c*l* + 7 m*l*
= 9 *l* 6 c*l* 7 m*l*

(f) 8097 m/ = 8000 m/ + 90 m/ + 7 m/
= 8 / + 9 c/ + 7 m/ = 8 / 9c/ 7m/

4.

/	m/
46	009
+ 38	056
84	065

Hence,
46 / 009 m/ + 38 / 056m/
= 84 / 065 m/

5.

/	m/
23	108
47	006
+18	075
88	189

Hence,
23 / 108 m/ + 47 / 006m/
+ 18 / 075 m/
= 88 / 189 m/

6.

/	m/
128	505
226	729
+ 86	045
441	279

So, 441 / 279 m/

7.

/	m/
4	685
19	095
+ 16	107
39	887

So, 39 / 887 m/

8.

/	m/
44	602
208	400
+ 98	125
351	127

So, 351 / 127 m/

9.

kl	hl	dal	l
3	6	9	8
+ 1	2	0	3
4	9	0	1

So, 4 k/ 9 h/ 0 da/ 1 /

10.

kl	hl	dal	l
6	3	5	9
+ 8	9	0	6
15	2	6	5

So, 15k/ 2h/ 6da/ 5/

11.

l	dl	cl	ml
9	3	6	7
+ 3	6	8	9
13	0	5	6

So, 13/ 0d/ 5c/ 6m/

12.

/	d/	c/	m/
7	3	9	6
+ 9	3	6	8
16	7	6	4

So, 16/ 7d/ 6c/ 4m/

13.

/	m/
13	605
– 9	258
4	347

So, 4 / 347 m/

14.

	l	ml
	9	175
−	7	008
	2	167

So, 2 l 167 ml

15.

	l	ml
	73	108
−	59	425
	13	683

So, 13l 683ml

16.

	l	ml
	139	054
−	49	435
	89	619

So, 89l 619ml

17.

	kl	l
	31	315
−	25	085
	06	230

So, 6 kl 230 l

18.

	kl	l
	512	750
−	439	475
	073	275

So, 73 kl 275 l

19.

	kl	ml
	303	320
−	59	456
	243	864

So, 243kl 864ml

20.

	l	ml
	70	025
−	48	725
	21	300

So, 21l 300ml

21.

	kl	l	ml
	[8]	[1174]	[1195]
	~~9~~	~~175~~	~~195~~
−	8	220	250
	0	954	945

Hence,
9kl 175 l 195 ml –
8kl 220 l 250 ml
= 954 l 945 ml

(Note : 1 kl = 1000 l, 1 l = 1000 ml)

22.

	l	dl	cl	ml
	[21]	[14]	[5]	[12]
	~~22~~	~~4~~	~~6~~	~~2~~
−	18	7	5	9
	03	7	0	3

Hence,
22l 4dl 6cl 2ml – 18 l 7dl
5cl 9ml = 3l 7dl 3ml

(Note : 1 l = 10dl, 1dl = 10 cl, 1cl = 10 ml)

23.

	kl	hl	dal	l
	[5]	[10]	[11]	[13]
	~~6~~	~~1~~	~~2~~	~~3~~
−	4	2	3	5
	1	8	8	8

Hence,
6kl 1hl 2dal 3l –
4kl 2hl 3dal 5l
= 1kl 8hl 8dal 8l

(Note : 1 kl = 10hl, 1 hl = 10 dal, 1 dal = 10l)

24.

dal	l	d/	c/
	[5]	[11]	[11]
8	~~6~~	~~2~~	~~1~~
– 4	5	9	7
4	0	2	4

Hence,
8dal 6/ 2d/ 1c/ –
4dal 5/ 9d/ 7c/
= 4dal 2d/ 3c/

(Note : 1 dal =10/, 1l = 10d/, 1d/ = 10/)

25.

l	d/	c/	m/
[7]	[14]	[5]	[12]
~~8~~	~~4~~	~~6~~	~~2~~
– 2	6	4	9
5	8	1	3

Hence,
8/ 4d/ 6c/ 2m/ –
2l 6d/ 4c/ 9m/
= 5/ 8d/ 1c/ 3m/

26.

k/	h/	dal	l
[8]	[12]	[15]	[18]
~~9~~	~~3~~	~~6~~	~~8~~
– 6	9	7	9
2	3	8	9

Hence,
9k/ 3h/ 6da/ 8/ –
6k/ 9h/ 7da/ 9/
= 2k/ 3h/ 8dal 9/

Measures of Time

Let Us Do-13A

1. (a) 8 : 50; (b) 2 : 45; (c) 7 : 54; (d) 3 : 29

2. **3.** Do yourself.

3. (a) 3 : 15 a.m.; (b) 3 : 20 p.m. ; (c) 11 : 20 p.m. ;
(d) 4 : 25 p.m. ; (e) 5 : 20 a.m. ;
(f) 12 : 30 a. m.; (g) 12 : 40 p.m. ; (h) 11 : 50 p.m. ;
(i) 11 : 30 a.m. ; (j) 10 : 30 p.m.

4. (a) 11 : 35 p.m.; (b) 2 : 45 p.m.; (c) 7 : 35 a.m.;
(d) 4 : 05 p.m.; (e) 7 : 30 p.m.; (f) 11 : 20 a.m.;
(g) 12 : 50 p.m.; (h) 4 : 05 p.m.

5. (a) 1 hours 15 minutes; (b) 3 hours 40 minutes;
(c) 7 hours 15 minutes; (d) 3 hours 45 minutes;
(e) 4 hours; (f) 15 hours 55 minutes.

Let Us Do-13B

1. (a) 11 days (b) 15 days

1 day = 24 hours
∴ 11 days = 24 × 11
= 264 hours

1 day = 24 hours
∴ 15 days = 24 × 15
= 360 hours

(c) 7 days 10 hours
1 day = 24 hours
7 days 10 hours
= 7 × 24 + 10 hours
168 + 10 = 178 hours

(d) 19 days 11 hours
1 day = 24 hours
(19 × 24 + 11) hours
= 467 hours

(e) 13 days 15 hours
1 day = 24 hours
(13 × 24 + 15) hours
= 327 hours

(f) 23 days 23 hours
1 day = 24 hours
(23 × 24 + 23) hours
= 575 hours

2. (a) 17 hours
17 × 60 = 1020 minutes
(∵ 1 hours = 60 minutes)

(b) 20 hours
20 × 60 = 1200 minutes
(∵ 1 hours = 60 minutes)

(c) 9 hours 25 min.
9 × 60 m + 25 min
540 m + 25 min
= 565 minutes

(d) 20 hours 45 min.
1 hr = 60 min.
(20 × 60 + 45) min
= 1245 mins

(e) 27 hours 22 min.
(27 × 60 + 22) mins.
= 1642 mins

(f) 16 hours 40 min
1 hr = 60 min
(16 × 60 + 40) min
= 1000 mins

3. (a) 3 days 20 hours 45 minutes
3 × 24 × 60 + 20 × 60m + 45m
4320m + 1200m + 45m
5565 minutes

(b) 6 days 12 hours 25 minutes
6 × 24 × 60 m + 12 × 60m + 25m
8640 + 720m +25m
9385 minutes

(c) 9 days 15 hours 55 min.
1 day = 24 hr.
[(9 × 24 × 60) + (15 × 60) + 55] min
(12960 + 900 + 55) min.
13915 mins.

(d) 4 days 16 hrs. 40 min.
1 day = 24 hr.
[(4 × 24 × 60) + (16 × 60) + 40] mins.
(5760 + 960 + 40) min.
6760 mins.

(e) 8 days 21 hours 30 minutes
[(8 × 24 × 60) + (21 × 60) + 30]min.
[11520 + 1260 + 30] min.
12810 minutes

(f) 7 days 15 hours 45 min.
[(7 × 24 × 60) + (15 × 60) + 45] min.
[10080 + 900 + 45] min
11025 minutes

4. (a) 5 minutes
5 × 60 = 300 seconds (1 minutes = 60 sec.)

(b) 17 min. = 17 × 60 = 1020 sec

(c) 23 minutes
23 × 60 = 1380 sec.

(d) 29 minutes
1 min = 60 sec
(29 × 60) sec
= 1740 sec.

(e) 15 minutes 25 seconds
15 × 60 sec + 25 sec
= 900 sec + 25 sec
= 925 seconds.

(f) 31 minutes 35 sec.
(31 × 60 + 35) sec. = 1895 sec.

(g) 45 minutes 15 sec.
(45 × 60 + 15) sec.
= 2715 sec.

(h) 55 minutes 37 sec.
(55 × 60 + 37) sec.
= 3337 sec.

(i) 59 minutes 23 sec.
(59 × 60 + 23) sec. = 3563 sec.

(j) 41 minutes 20 seconds.
(41 × 60 + 20) sec. = 2480 sec.

5. (a) 897 minutes
(897 ÷ 60) hours = 14.95
Hence, 14 hours 95 min.
∴ 15 hours 35 min.

(b) 979 minutes
(979 ÷ 60) hours
= 16.31
Hence, 979 min.
= 16 hours 31 min.

(c) 1189 min.
(1189 ÷ 60) hr = 19.81
19 hours 81 min.
Hence, 20 hrs 21 min.

(d) 1776 min.
(1776 ÷ 60) hr
= 29.6 hr.
29 hr. 6 min.

(e) 842 minutes = (842 ÷ 60) hr.
= 14.03 hr = 14 hr 3 min.

(f) 1385 min. = (1385 ÷ 60) hr.
= 23.08 hr = 23 hr 8 min.

(g) 1287 min
(1287 ÷ 60) hr
= 21.45 hr
= 21 hr 45 min.

(h) 1095 min
(1095 ÷ 60) hr
= 18.25 hr
= 18 hr 25 min.

6. (a) 515 seconds
(515 ÷ 60) minutes
8.58 = 8 min. 58 sec.

(b) 935 seconds
(935 ÷ 60) minutes
15.58 = 15 min. 58 sec.

(c) 2375 sec
(2375 ÷ 60) min
= 39 min 58 sec.

(d) 444 seconds
(444 ÷ 60) min.
= 7 min 4 sec

(e) 999 seconds
(999 ÷ 60) min.
= 16 min 65 sec.
= 17 min 5 sec

(f) 2888 seconds.
(2880 ÷ 60) min.
= 48 min. 13 sec

(g) 3199 seconds
(3199 ÷ 60) min
= 53.31 min
= 53 min 31 sec

(h) 3544 seconds
(3544 ÷ 60) min
= 59.06 min
= 59 min 6 sec

7. 1 hours = 60 minutes, 1 minutes = 60 seconds.

(a) 4397 seconds
(4397 ÷ 60) minutes
73.28
Hence, 4397 sec.
73 min. 28 seconds.
1 hour 13 min. 17 sec.

(b) 5048 seconds
(5048 ÷ 60) min. = 84.13
Hence,
5048 seconds
84 min. 13 sec.
1 hour 24 min. 8 sec.

(c) 3495 seconds
(3495 ÷ 60) min

(d) 7000 sec
(7000 ÷ 60) min

= 58.25 min
= 58 min 25 sec.

(e) 8515 seconds
(8515 ÷ 60) min
= 141.91 min
= 2 hr 21 min 55 sec.

(f) 7490 seconds
(7490 ÷ 60) min
= 124.33 min
= 2 hr 4 min 50 sec.

(g) 8799 seconds
(8799 ÷ 60) min
= 146.65 min
= 2 hr 26 min 39 sec.

(h) 7985 seconds
(7985 ÷ 60) min
= 133.08 min
= 2 hr 13 min 5 sec.

8. 60 times.

9. 24 times.

Let Us Do-13C

1. (a) 7 : 00 pm
1900 hours

(b) 4 : 00 pm
1600 hours

(c) 2: 30 a.m.
0230 hours

(d) 9 : 40 a.m.
0940 hours

(e) 11 : 40 a.m.
1140 hours

(f) 8 : 30 p.m.
2030 hours

(g) 11 : 30 p.m.
2330 hours

(h) 11 : 15 a.m
1115 hours

(i) 4 : 30 a.m.
0430 hours

(j) 12 : 40 p.m.
= 1240 hours

(k) 2 : 40 p.m.
(2 : 40 + 12) hours = 14 : 40 hours or 1440 hours

(l) 9 : 20 a.m. = 0920 hours

2. (a) 1235 hours = 12 : 35 p.m.

(b) 0925 hours = 9 : 25 a.m.

(c) 2100 hours = 12 hours + 009 hours = 9 : 00 p.m.

(d) 1525 hours = 12 hours + 0325 hours = 3 : 25 p.m.

(e) 1130 hours = 11 : 30 a.m.

(f) 1015 hours = 10 : 15 a.m.

(g) 1600 hours = 12 hours + 004 hours = 4 : 00 p.m.

(h) 1415 hours = 12 hours + 0215 = 2 : 15 p.m.

(i) 0100 hours = 1 : 00 a.m.

(j) 2350 hours = 12 hours + 1150 hours = 11 : 50 p.m.

(k) 1825 hours = 12 hours + 0625 hours = 6 : 25 p.m.

(l) 1410 hours = 12 hours + 0210 hours = 2 : 10 p.m.

3. Neha doing her homework = 1620 hours
She finished her homework = 1910 hours
So, the time for doing her homework
= 1910 hours – 1620 hours = 0250 hours
= 2 hours 50 min.

	h	min
	19	10
–	16	20
	2	50

4. A cricket match between two teams started = 1100 hours
Time for match finished = 1835 hours
So, the time for match = 1835 hours – 1100 hours
= 0735 hours = 7 hours 35 minutes

5. Distance cover by a train between two station
= 4 hour 15 min. = 0415
Time for train starting =1600 hours
So, the train reached station = 1600 hours + 0415 hours
= 2015 hours = 8 : 15 p.m.

6. Time for Anil sleeping = 9 hours
Time for his going on bed = 2130 hours
So, he get up next morning = 6 : 30 a.m

7. From New Delhi Shatabdi Express leaves = 1900 hours.
It reached Chandigarh = 2315 hours
So, total time of its journey = 2315 hours – 1900 hours
= 0415 hours
= 4 hours 15 minutes

8. Before 5 : 20 p.m. the time was in 8 hours 30 minutes
= 8 : 50 a.m.

9. After 6 : 30 p.m. the time is in 4 hours 40 minutes
= 11 : 10 p.m.

Let Us Do-13D

1. Time for Kanika getting morning = 6 : 20 a.m.
She will be ready for the school = 35 minutes
So, the time she start for school = 6 : 20 + 00.35
= 6 : 55 a.m.

2. Time for first period of school starting = 7 : 25 a.m.
Time for finished of first period = 8 : 05

So, the duration of first period

$$\begin{array}{r} \cancel{8}\ :\ \cancel{05}^{65} \\ 7\ :\ 25 \\ \hline 0\ :\ 40 \end{array}$$ minutes

3. Time for starting cricket match between India and England
= 9 : 15 a.m.
It finished = 5 : 35 p.m.
Time from 9 : 15 to 12 noon = 12 hrs – (9 hrs 15 minutes)
= (11 hrs + 1 hrs) – (9 hrs 15 minutes)
(11 hrs – 9 hrs) + (1 hrs – 15 minutes)
(11 hrs – 9 hrs) + (60 minutes – 15 minutes)
(11 hrs – 9 hrs) + (60 minutes – 15 minutes)
2 hrs + 45 minutes
= 2 hrs 45 minutes
Time from 12 noon to 5 : 35 p.m. = 5 hours 35 minutes
Total time for match
= 2 hrs 45 minutes + 5hrs 35 minutes
= 8 hrs 20 minutes

4. Kapil went to see movie = 2 : 45 p.m
He returned home = 7 : 35 p.m.
so, time for his staying =

$$\begin{array}{rcc} & \text{h} & \text{m} \\ & \boxed{6} & \boxed{95} \\ & \cancel{7}\ : & \cancel{35} \\ -\ & 2\ : & 45 \\ \hline & 4\ : & 50 \end{array}$$ or 4 hrs 50 mintues

5. Train started from Delhi = 6 : 45 a.m.
In reached Agra = 11 : 35 a.m.

$$\text{Train taken time} = \begin{array}{r} {}^{10}\cancel{11}\ :\ {}^{95}\cancel{35} \\ 6.45 \\ \hline 4 : 50 \end{array}$$

= 4 hours 50 minutes

6. Time for Vipul going Mumbai from New Delhi = 4 : 05 p.m.
He reached Mumbai = 9 : 45 a.m.
So, the time spend by him = 17 hrs 40 minutes

7. Saurabh goes to school = 7 : 15 a.m.
he come back home = 2 : 00 p.m.
So, time from 12 noon to 7 : 15 am
= 12 hrs – (7hrs 15 min) (11 hrs + 1 hrs) – (7 hrs + 15 min)
(11 hrs – 7 hrs) + (1 hrs – 15 min) = 4 hrs + (60 min – 15 min)
4 hrs 45 min
Total time spend by him = 4 hrs 45 min + 2 hrs
= 6 hrs 45 min

8. Time for Sonia studies = 6 : 35 a.m. to 3 : 00 p.m.
She study Everyday = 6 hrs 35 min + 3 hrs = 8 hrs 25 min.

Let Us Do-13E

1.

Hrs.	Min.
3	2 5
+ 5	2 4
8	4 9

Ans. 8 hrs 49 min

2.

Min	Sec
35	53
+ 19	35
54	88

Ans. 55 min 28 Sec

3.

Min	Sec
19	25
23	34
+ 16	45
58	104

Ans. 59 min 44 Sec

4.

Hrs.	Min.	Sec
4	25	15
+ 6	37	45
10	62	60

Ans. 11 hrs 3 min 0 Sec

5. (a)

Hrs.	Min.
6	2 5
+ 8	4 0
1 4	6 5

Hence,
6 hrs 25 minutes
+ 8hrs 40 minutes
= **15 hrs 05 minutes**

(b)

Hrs.	Min.
1 6	3 4
+ 6	4 3
2 2	7 7

Hence,
16 hrs 34 minutes
+ 6hrs 43 minutes
= **23 hrs 17 minutes**

(c)

Min.	Sec.
45	19
+ 13	36
58	55

Hence,
45 min. 19 sec.
+ 13 min 36 sec.
= **58 min 55 sec.**

(d)

Hrs.	Min.	Sec.
4	45	36
+ 9	56	29
13	101	65

Hence,
4 hr. 45 min. 36 sec.
+ 9 hr. 56 min 29 sec.
= **14hr 42 min 5 sec.**

(e)

Hrs.	Min.	Sec.
14	54	27
+ 8	27	57
22	81	84

Hence,
14 hr. 54 min. 27 sec.
+ 8 hr. 27 min 57 sec.
= **23hr 22 min 24 sec.**

17.

Hrs.	Min.
7	52
– 4	29
3	23

Ans. 3hrs 23 min.

18.

Min.	Sec.
59	49
– 37	25
22	24

Ans. 22 min. 24 sec.

19.

Hrs.	Min.	Sec.
9	27	49
– 5	16	23
4	11	26

Ans. 4 hrs 11 min 26 sec

20.

Hrs.	Min.	Sec.
17	103	
~~18~~	~~43~~	54
– 6	54	39
11	49	15

Note : 1 hrs = 60 min + 43 min
= 103 min
Ans. 11 hrs 49min. 15 sec.

Calender

Let Us Do-14A

1. April, June, September and November.
2. January, March, May, July, August, October and December.
3. A leap year has 366 days and an ordinary year has 365 days.

4. 1924, 1988, 1992, 1996, 2000, 2004.

5. Do yourself.

6. (a) $9 \times 7 = 63$ days

(b) $7 \times 7 = 49$ days

(c) 23 weeks 5 days = 23 weeks + 5 days
= (23 × 7) days + 5 days
= 161 days + 5 days = 166 days

(d) 39 weeks 6 days = 39 weeks + 6 days
= (39 × 7) days + 6 days
= 273 days + 6 days = 279 days

(e) 8 months = (8 × 30) days = 240 days

(f) 7 months 5 days = (7 × 30) days + 5 days
= 210 days + 5 days = 215 days

(g) 2 ordinary years + 56 days = (2 × 365) days + 56 days
= 730 days + 56 days
= 786 days

(h) 1 leap year 15 days = 366 days + 15 days = 381 days

7. (a) 4 years = (4 × 12) months = 48 months

(b) (7 × 12) months = 84 months

(c) (11 × 12) months = 132 months

(d) 15 years 2 months = 15 years + 2 months
= (15 × 12) months + 2 months
= 180 months + 2 months
= 182 months

(e) 18 years 9 months = 18 years + 9 months
= (18 × 12) months + 9 months
= 216 months + 9 months
= 225 months

(f) 10 years 9 months = 10 years + 9 months
= (10 × 12) months + 9 months
= 120 months + 9 months
= 129 months

(g) 8 years 11 months = 8 years + 11 months
= (8 × 12) months + 11 months
= 96 months + 11 months
= 107 months

8. (a) 63 days = (63 ÷ 7) weeks = 9 weeks
(b) 315 days = (315 ÷ 7) weeks = 45 weeks
(c) 357 days = (357 ÷ 7) weeks = 51 weeks
(d) 252 days = (252 ÷ 7) weeks = 36 weeks
(e) 154 days = (154 ÷ 7) weeks = 22 weeks
(f) 287 days = (287 ÷ 7) weeks = 41 weeks
(g) 238 days = (238 ÷ 7) weeks = 34 weeks
(h) 343 days = (343 ÷ 7) weeks = 49 weeks

9. (a) 48 months = (48 ÷ 12) years = 4 years
(b) 144 months = (144 ÷ 12) years = 12 years
(c) 180 months = (180 ÷ 12) years = 15 years
(d) 300 months = (300 ÷ 12) years = 25 years
(e) 540 months = (540 ÷ 12) years = 45 years
(f) 816 months = (816 ÷ 12) years = 68 years
(g) 1620 months = (1620 ÷ 12) years = 135 years;
(h) 756 months = (756 ÷ 12) years = 63 years

10. (a) 5/05/1997 (b) 15/08/1947
(c) Do yourself. (d) 26/01/1950
(e) 02/10/1869 (f) 01/01/2002
(g) 5/09/2001

11. (a)

Years	Months
1 1	
15	10
+16	9
32	7

(b)

Years	Months	Days
1 1	1	
25	8	15
+29	7	20
55	4	5

(c)

Years	Months	Days
1 1	1	
45	7	25
+35	8	12
81	4	7

12. (a)

Years	Months
15	9
−12	6
3	3

(b)

Years	Months
7	19
~~18~~	~~7~~
−11	9
6	10

(c)

Years	Months
5	14
~~26~~	~~02~~
−21	10
4	4

13. (a)

	Weeks	Days
	7 ~~8~~	11 ~~4~~
−	2	6
	5	5

(b)

	Weeks	Days
	4 ~~2.5~~	10 ~~3~~
−	2 3	4
	1	6

(c)

	Weeks	Days
	7 ~~1.8~~	10 ~~3~~
−	1 5	5
	2	5

(d)

	Weeks	Days
	6 ~~3.7~~	11 ~~4~~
−	2 9	5
	7	6

14. 25th April 1986 can be written as 25/04/1986
5th September 1995 can be written as 05/09/1995
We write the given dates in columns and subtract

	Years	Months	Days
		8	35
	1995	~~09~~	05
−	1986	04	25
	9	4	10

∴ Duration of work = 9 years 4 months 10 days.
Hence, Kapil worked in the firm for 9 years 4 months 10 days.

15. 5th August 2004 can be written as 5/08/2004
23rd November 2004 can be written as 23/11/2004
We write the given dates in columns and subtract.

	Years	Months	Days
	2004	11	23
−	2004	08	05
	0	3	18

∴ Duration of illness = 3 months 18 days
Hence, the boy recovered from illness in 3 months 18 days.

16. 4th March 2015 can be written as 4/03/2015
15th April 2015 can be written as 15/04/2015
We write the given dates in columns and Subtract

Years	Months	Days
2004	04	15
– 2004	03	04
0	01	11

Hence, the examination continue till 1 month 11 days.

17. 2nd May 2010 can be written as 2/05/2010
15th July 2010 can be written as 15/07/2010
We write the given dates in columns and subtract

Years	Months	Days
2010	7	15
– 2010	5	2
	2	13

Hence, the school ramain close = 2 months 13 days

18. 5th March 1982 can be written as 5/03/1982
15th September 1987 can be written as 15/09/1987
We write the given dates in columns and subtract

Years	Months	Days
1987	9	15
– 1982	3	5
5	6	10

Hence, Megha is older then vishal by 5 years 6 months 10 days.

Points, Lines, Rays and Segments

Do yourself.

Quadrilaterals

Let Us Do-16A

1. (a) Closed curves : A curve which begins and ends at the same point is called a closed curve.

(b) **Simple closed curve :** A closed curve which does not intersect itself is called a simple closed curve.

(c) **Polygon :** A polygon is a simple closed curve bounded by only line segments.

(d) **Rectangle :** A quadrilateral having opposite sides equal and each angle equal to 90° is called a rectangle.

(e) **Square :** A quadrilateral having all sides equal and its every angle measures 90° is called a square.

(f) **Parallelogram :** A quadrilateral whose opposite sides are parallel is called a parallelogram. The opposite sides of a parallelogram are equal and parallel.

(g) **Rhombus :** A parallelogram having all its sides equal and parallel is called a rhombus.

(h) **Trapezium :** A quadrilateral in which one pair of opposite sides is parallel is called a trapezium.

(i) **Kite :** A quadrilateral having two pairs of equal adjacent sides but two unequal opposite sides is called a kite.

2. **Triangle :** A polygon made up of three line segments is called a triangle.
   On the basis of sides, triangles are of three types :
   (a) Scalene triangle
   (b) Isosceles triangle
   (c) Equilateral triangle
3. **Quadrilateral :** A polygon made up of four line segments is called a quadrilateral.
   For example : rectangle, square, parallelogram, rhombus, trapezium and kite.

Circle

Let Us Do-17A

1. **& 2.** Do yourself
3. **Types of triangles :**

(a) **Scalene triangle :** A triangle in which all the three sides are unequal is called a scalene triangle.

(b) **Isosceles triangle :** A triangle in which two of its sides are equal is called an isosceles triangle.

(c) **Equilateral triangle :** A triangle in which all the three sides are equal is called an equilateral triangle.

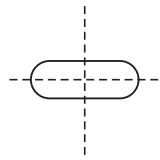
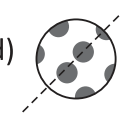
4. In square, all sides are equal while in rectangle, only opposite sides are equal.

5. **Radius :** The distance between any point on the circle and centre of the circle is called radius of the circle.
Diameter : A diameter of the circle is a line segment which passes through the centre of the circle and whose end points lie on the circle.
Circumference : The length of closed curve forming the circle is called its circumference.
Chord : A line segment whose end points lie on the circle is called a chord of the circle.
Arc : Any part of a circle is called an arc of the circle.

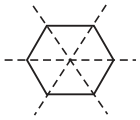
Symmetry of Shapes

Let Us Do-18A

1. (a), (b), (e), (f), (j) are symmetrical about the axis.
(a) Axis of symmetry = AOB;
(b) Axis of symmetry = DB;
(e) Axis of symmetry = AD
(f) Axis of symmetry = AOB;
(j) Axis of symmetry = AB

2. (a)  (b)  (c)  (d) 

(e)  (f)  (g) 

(h)  (i)  (j) 

Note : figure (g) and figure (i) are not symmetrical

Perimeter and Area

Let Us Do-19A

1. Perimeter = AB + BC + CD + DA = 3 cm + 2 cm + 3 cm + 2 cm
   = 10 cm
2. Perimeter = AB + BC + CD + DA = 4 cm + 4 cm + 4 cm + 4 cm
   = 16 cm
3. Perimeter = AB + BC + CD + DE + EF + FG + GA
   = 2 cm + 3 cm + 4 cm + 4 cm + 3 cm + 2 cm + 6 cm
   = 24 cm
4. Perimeter = AB + BC + CA = 4 cm + 5 cm + 3 cm
   = 12 cm
5. Perimeter = AB + BC + CD + DE + EF + FG + GH + HI + IJ + JK + KL + LA
   = 1 cm + 2 cm + 4 cm + 2 cm + 1 cm + 6 cm + 1 cm + 2 cm + 4 cm + 2 cm + 1 cm + 6 cm = 32 cm
6. Perimeter = AB + BC + CD + DE + EA
   = 3 cm + 4 cm + 5 cm + 6 cm + 3 cm = 21 cm

Let Us Do-19B

1. Perimeter of a rectangle = 2 × (length + breadth) = 2 × (6 + 3) cm = 2 × 9 = 18 cm
2. Perimeter = 2 × (12 + 8) m = 2 × 20 = 40 m
3. Perimeter = 2 × (64 + 35) m = 2 × 99 = 198 m

4. Perimeter = 2 × (8 m 25 cm + 7 m 50 cm)
= 2 × (15 m 75 cm) ⇒
= 31 m 50 cm

m	cm
15	75
	× 2
31	50

5. Perimeter = 4 × 6m 75cm = 27 m

6. Perimeter $= 4 \times 4\frac{3}{4}\text{ cm} = 4 \times \frac{19}{4} = 19\text{ cm}$

7. Perimeter = 4 × 120m 75cm = 483 m

8. Perimeter = 4 × 196m 75 cm = 787 m

9. Perimeter = 2 × (25 + 12) m = 2 × (37) m = 74 m

10. ∵ 2 × length + 2 × breadth = perimeter
∴ 2 × breadth = perimeter – 2 × length
2 × breadth = 164 – 2 × 50
2 × breadth = 164 – 100 = 64

$$\text{breadth} = \frac{64}{2} = 32\text{ m}$$

11. Perimeter of the park = 2 × (length + breadth)
= 2 × (96 + 74) m = 2 × 170 m = 340 m
Distance covered by the boy = 3 × perimeter
= (3 × 340) m = 1020 m

12. Perimeter = 4 × 175 m = 700 m
Hence, 700 m wire is needed for fencing all around it.

13. Perimeter = 4 × side
128 = 4 × side

$$\therefore \quad \text{side} = \frac{128}{4} = 32\text{ m}$$

14. Here, Breadth = 17 m
length = 3 times of its breadth
= 3 ×17 = 51 m
Perimeter = 2 × (51 +17) m
= 2 × (68) m = 136 m

15. Length of the garden = 125.5 m
Breadth of the garden = 96.5
Perimeter = 2 × length + 2 × breadth
= (2 × 125.5) + (2 × 96.5)
= 251 + 193 = 444 m

Wire is needed for fencing all around the garden
= 444 × 3 = 1332 m

16. Perimeter of triangle = (32 + 28 +15) m = 75 m

17. Perimeter of a square park = (4 × 165) m = 660 m
cost of fencing = ₹ (6 × 660) = ₹ 3960

Pictorial Representation of Data

Let Us Do-20A

1. (a) $2 \times 3 = 6$ bicycles (b) $3 \times 3 = 9$ bicycles
(c) $8 \times 3 = 24$ bicycles

2. (a) $4 \times 5 = 20$ telephones (b) $6 \times 5 = 30$ telephones
(c) $10 \times 5 = 50$ telephones

3. (a) $5 \times 10 = 50$ birds (b) $6 \times 10 = 60$ birds
(c) $9 \times 10 = 90$ birds

4. (a) One symbol represents 5 toffees.
(b) Priyanka have $18 \times 5 = 90$ toffees.
(c) Priyanka has the maximum number of toffees.
(d) Kapil has the minimum number of toffees.
(e) No. of toffees in all the four children
= (10 × 5) + (12 × 5) + (15 ×5) + (18 × 5)
= 50 + 60 + 75 + 90
= 275 toffees

5.

Year	Number of students
1997–98	☺☺☺☺☺☺☺☺☺☺
1998–99	☺☺☺☺☺☺☺☺
1999–2000	☺☺☺☺☺☺☺☺☺☺☺☺
2000–2001	☺☺☺☺☺☺

One ☺ represents 5 students

6.

Game	Number of students
Football	☺ ☺ ☺ ☺ ☺
Hockey	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
Cricket	☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺
Badminton	☺ ☺ ☺ ☺ ☺ ☺

One ☺ represents 10 students

7.

Month	Mobile Phone Sale
May	
June	
July	
August	
September	

One  represents 2 mobile

Roman Numerals

Let Us Do-21A

1. (a) 4; (b) 7; (c) 9; (d) 12;
(e) 16; (f) 24; (g) 29; (h) 34;
(i) 15; (j) 39; (k) 33; (l) 36;

2. (a) III; (b) VIII; (c) XII; (d) XVI;
(e) XIX; (f) XXIV; (g) XXXIV; (h) XXXVII;
(i) XXVII; (j) XXXI; (k) XV; (l) XXXIX.

3. (a) vii (b) viii (c) v (d) iii
(e) iv (f) i (g) ii (h) vi

4. -a, c, e, f