

SCHOOL ACCOLADES

Std-5

Elementary Mathematics

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Ex-2: Find the GCF (Greatest Common Factor)

1) $8, 6$

$$\begin{array}{r} 2 \overline{) 8, 6} \\ 4, 3 \end{array}$$

\therefore GCF is 2 Ans: 2

2) $12, 10$

$$\begin{array}{r} 2 \overline{) 12, 10} \\ 6, 5 \end{array}$$

\therefore GCF is 2 Ans: 2

3) $9, 16$

$$\begin{array}{r} 1 \overline{) 9, 16} \\ 9, 16 \end{array}$$

\therefore GCF is 1 Ans: 1

4) $32, 24$

$$\begin{array}{r} 2 \overline{) 32, 24} \\ 2 \overline{) 16, 12} \\ 2 \overline{) 8, 6} \\ 4, 3 \end{array}$$

\therefore GCF is $2 \times 2 \times 2 = 8$ Ans: 8

5) $36, 45$

$$\begin{array}{r} 3 \overline{) 36, 45} \\ 3 \overline{) 12, 15} \\ 4, 5 \end{array}$$

\therefore GCF is $3 \times 3 = 9$

6) $5 \overline{) 105, 140}$
 $7 \overline{) 21, 28}$
 $3, 4$

\therefore GCF is $5 \times 7 = 35$

Ans: 35

7) $2 \overline{) 18, 30, 24}$
 $3 \overline{) 9, 15, 12}$
 $3, 5, 4$

\therefore GCF is $2 \times 3 = 6$

Ans: 6

8) $2 \overline{) 32, 64, 40}$
 $2 \overline{) 16, 32, 20}$
 $2 \overline{) 8, 16, 10}$
 $4, 8, 5$
 $2, 4, 5$

\therefore GCF is $2 \times 2 \times 2 = 8$

Ans: 8

9) $35, 21, 28$

$$\begin{array}{r} 1 \overline{) 35, 21, 28} \\ 35, 21, 28 \end{array}$$

\therefore GCF is 1

Ans: 1

10) $1 \overline{) 39, 26, 52, 24}$
 $39, 26, 52, 24$

\therefore GCF is 1 Ans: 1

11) $25, 26, 27, 30$

$$\begin{array}{r} 1 \overline{) 25, 26, 27, 30} \\ 25, 26, 27, 30 \end{array}$$

\therefore GCF is 1 Ans: 1

Exercise-5:

1) Find the LCM:

1. $3 \overline{) 15, 21}$
 $5, 7$

\therefore LCM = $3 \times 5 \times 7 = 105$

Ans: 105

2. $7 \overline{) 35, 21}$
 $5, 3$

\therefore LCM = $7 \times 5 \times 3$
 $= 105$

Ans: 105

3. $2 \overline{) 20, 12, 25}$
 $2 \overline{) 10, 6, 25}$
 $5 \overline{) 5, 3, 25}$
 $1, 3, 5$

\therefore LCM = $2 \times 2 \times 3 \times 5 \times 5$
 $= 300$ Ans: 300

4. $9, 16, 18$

$$\begin{array}{r} 2 \overline{) 9, 16, 18} \\ 3 \overline{) 3, 8, 9} \\ 3 \overline{) 3, 8, 3} \\ 1, 8, 3 \end{array}$$

\therefore LCM = $2 \times 3 \times 3 \times 3 \times 8$
 $= 144$ Ans: 144

5. $2 \overline{) 20, 12, 25, 32}$
 $2 \overline{) 10, 6, 25, 16}$
 $5 \overline{) 5, 3, 25, 8}$
 $1, 3, 5, 8$

\therefore LCM = $2 \times 2 \times 3 \times 5 \times 5 \times 8$
 $= 2400$ Ans: 2400

Ex-2: Find the GCF:

$$\begin{array}{r} 1) \quad 12, 18 \\ 2 \overline{) 12, 18} \\ 3 \overline{) 6, 9} \\ 2, 3 \end{array}$$

\therefore GCF of 12, 18 is $2 \times 3 = 6$

Ans: 6

$$\begin{array}{r} 2) \quad 24, 28 \\ 2 \overline{) 12, 14} \\ 6, 7 \end{array}$$

\therefore GCF of 24, 28 is $2 \times 2 = 4$

Ans: 4

$$\begin{array}{r} 3) \quad 39, 52 \\ 13 \overline{) 39, 52} \\ 3, 4 \end{array}$$

\therefore GCF of 39, 52 is 13

Ans: 13

$$\begin{array}{r} 4) \quad 2 \overline{) 54, 36, 72} \\ 3 \overline{) 27, 18, 36} \\ 3 \overline{) 9, 6, 12} \\ 3, 2, 4 \end{array}$$

\therefore GCF of 54, 36 and 72 is $2 \times 3 \times 3 = 18$

Ans: 18

$$\begin{array}{r} 5) \quad 1 \overline{) 20, 30, 36, 45} \\ 20, 30, 36, 45 \end{array}$$

\therefore GCF of 20, 30, 36, 45 is 1

Ans: 1

Ex-3: Multiples of 20: 20, 40, 60, 80, 100
Multiples of 25: 25, 50, 75, 100

\therefore LCM of 20 and 25 is 100.

So, a tree and a lamp post will be at the same spot of the same distance of 100 m from the starting point in the road.

Similarly the 2nd same point will be 200 m apart, the 3rd same spot will be 300 m apart and so on from the starting point.

\therefore The desired spots are at a distance of 100 m, 200 m, 300 m and so on from the beginning in the road.

Ex-4: Here the bells ring successively after 18 min, 15 min and 12 min.

Multiples of 18: 18, 36, 54, 72, 90, 108, 126, 144, 162, 180

Multiples of 15: 15, 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180

Multiples of 12: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144, 156, 168, 180

\therefore LCM of 18, 15 and 12 is 180.

so, if the bells ring together at 6 p.m.
then they will ring together again after 180 minutes or
3 hours of 6 p.m., that is at $(6+3)$ p.m. = 9 p.m.
Ans: At 9 p.m.

Ex-5:1) Here, length and width of the room are 42m and

$$\therefore \text{Area of the room} = 42 \text{ m} \times 36 \text{ m} \\ = 1512 \text{ m}^2$$

$$\begin{array}{r} 42 \\ \times 36 \\ \hline \end{array}$$

Now, $1512 = \cancel{38 \times 38} + \cancel{8 \times 8} + \cancel{2 \times 2}$

From the above, it is clear evident that in order to pave
Here, $6 \overline{)42, 36}$
 $\begin{array}{r} 7, 6 \\ \hline \end{array}$

\therefore GCF of 42 and 36 is 6.

\therefore The length of the side of the largest square-shape carpet
that can pave the floor is 6 cm.

2) The area of the carpet = $6 \text{ cm} \times 6 \text{ cm} = 36 \text{ cm}^2$
 To pave the floor carpets are necessary = $(1512 \div 36) \text{ cm}^2$
 $= \frac{1512 \text{ cm}^2}{36 \text{ cm}^2} = 42$

\therefore 42 carpets are necessary to pave the floor.

6. Here, number of banana = 42
 number of biswit = 84
 number of candies = 105.

Now, $42 = 1 \times 42$	$84 = 1 \times 84$	$105 = 1 \times 105$
$= 2 \times 21$	$= 2 \times 42$	$= 3 \times 35$
$= 3 \times 14$	$= 3 \times 28$	$= 5 \times 21$
$= 6 \times 7$	$= 4 \times 21$	$= 7 \times 15$
	$= 6 \times 14$	
	$= 7 \times 12$	

\therefore Factors of 42 = 1, 2, 3, 6, 7, 14, 21, 42

Factors of 84 = 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84

Factors of 105 = 1, 3, 5, 7, 15, 21, 35, 105

\therefore common factors of 42, 84, 105 are: 1, 3, 7, 21.

so, the teacher can divide the items among 3, 7 and 21 students.
 But there are more than 10 persons. so, the items can be
 distributed equally among 21 students.

Ans: 21 students.

Ex-3: Here, Length of tiles = 8 cm
width of tiles = 6 cm

Now, multiple of 8 = 8, 16, 24, 32
multiple of 6 = 6, 12, 18, 24,

∴ LCM of 8, 6 is 24.

∴ The length of a smallest side of the smallest square = 24 cm

1) The area of the tiles = $8 \text{ cm} \times 6 \text{ cm}$
= 48 cm^2

The area of the smallest square = $24 \text{ cm} \times 24 \text{ cm}$
= 576 cm^2

∴ To make the smallest square, tiles are necessary
= $576 \text{ cm}^2 \div 48 \text{ cm}^2$

$$\begin{array}{r} 24 \\ \times 24 \\ \hline 96 \\ 480 \\ \hline 576 \end{array}$$

∴ 12 tiles are necessary to make the smallest square.
= $\frac{576 \text{ cm}^2}{48 \text{ cm}^2} = 12$

2) Again Multiple of 8: 8, 16, 24, 32, 40, 48
Multiple of 6: 6, 12, 18, 24, 30, 36, 42, 48

∴ Common LCM of 8, 6 is 24, 48

∴ The length of a side of the second smallest square is 48 cm

Ex-13 Here, width of a graph paper = 12 cm

length of a graph paper = 18 cm

Now, $12 = 1 \times 12$ $18 = 1 \times 18$
 $= 2 \times 6$ $= 2 \times 9$
 $= 3 \times 4$ $= 3 \times 6$

∴ Factors of 12 = 1, 2, 3, 4, 6, 12

Factors of 18 = 1, 2, 3, 6, 9, 18

∴ HCF of 12, 18 is 6

∴ The length of a side of the largest square = 6 cm

1) Now the area of a graph paper = $(12 \times 18) \text{ cm}^2 = 216 \text{ cm}^2$
the area of the largest square = $6 \text{ cm} \times 6 \text{ cm} = 36 \text{ cm}^2$

∴ The number of the squares of the largest size = $\frac{216 \text{ cm}^2}{36 \text{ cm}^2}$
= 6

∴ 6 squares of the largest size

can we make from this graph paper.

Chapter - 13

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3

Ex-13.1) For east part: The total number of family members of the village,

$$= 5 + 7 + 3 + 4 + 4 + 7 + 2 + 6 + 4 + 5 + 6 + 3 + 5 + 6 + 5$$

$$= 72$$

The total number of family = 15

$$\therefore \text{Average number of family member} = \frac{72}{15} = 4.8$$

$$\begin{array}{r} 4.8 \\ 15 \overline{) 72} \\ \underline{-60} \\ 120 \\ \underline{-120} \\ 0 \end{array}$$

Again, For west part: The total number of family members of the village.

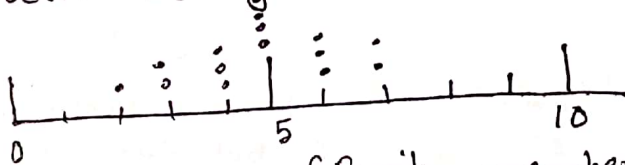
$$= 2 + 3 + 8 + 7 + 3 + 4 + 2 + 7 + 5 + 6 + 3 + 4 = 54$$

The total number of family = 12

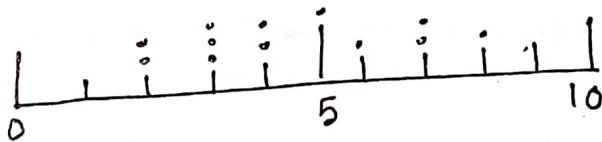
$$\therefore \text{Average number of family member} = \frac{54}{12} = 4.5$$

$$\begin{array}{r} 4.5 \\ 12 \overline{) 54} \\ \underline{-48} \\ 60 \\ \underline{-60} \\ 0 \end{array}$$

So, the average number of family member of east part and west part are 4.8 and 4.5 respectively.
Now the number of family members of eastern part of the village is shown below using (•) in a chart.



Again, the number of family members of west part of the village is shown below using dot (•) in the chart.



Ex-13.2

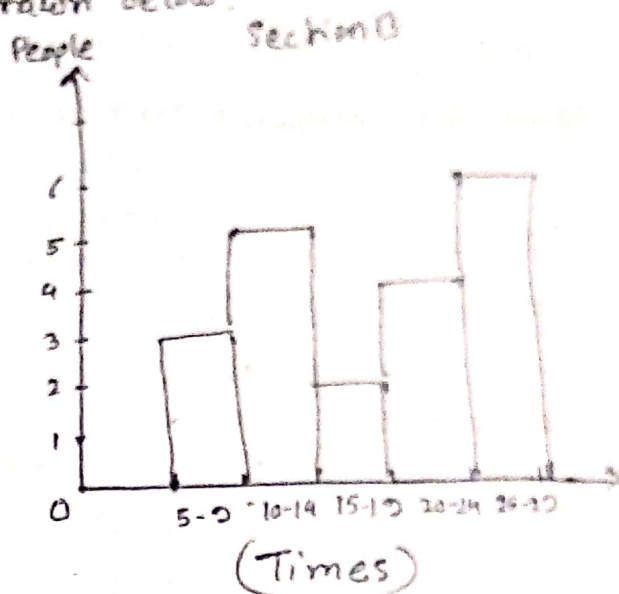
Show the distribution of data of section B students as in the table above:

Class Interval	Tally	Number
5-9		3
10-14		4
15-19		2
20-24		4
25-29		5
Total		20

Ex-3:

D A histogram of the data related to time of submission of homework of section B student is drawn below:

Class Interval of Submit homework	Number
5-9	3
10-14	5
15-19	2
20-24	4
25-29	6
Total	20



2) There are more students, that is 5 students in the class interval 20-24 in section A than section B but there are less student that is 1 student in the class interval (10-14) in section A than section B. (5 students)

1) The number of grade 5 students are there in this school is = $(5+5+5) = 15$

2) The class 35-39 includes more students than others.

3) Here total students = 25 and the students of class 35-39 = 7.
 \therefore The percent of students are in class 35-39 = $\frac{7 \times 4}{25 \times 4} = \frac{28}{100} = 28\%$

4) Here total students are less than 20 kilograms in weight = $(2+3)$ students = 5 students.

\therefore The percent of students are less than 20 kilograms in weight = $\frac{5 \times 4}{25 \times 4} = \frac{20}{100} = 20\%$