Chapter- 8

Factors and multiples

WORKSHEET

A. Fill in the blanks :

a) 1, 3, 5 and 15 are called _factors_ of 15.

b) All even numbers are divisible by _2_.

c) _1_ is a number which is neither prime nor composite.

d) 18 is a _multiple_ of 3 and 6.

e) Numbers that have only two factors, 1 and the number itself, are called _composite_ numbers.

B. Match the following :

Column – A	Column – B
1. Factor of 35	i) 1 (3)
2. Multiple of 5	ii) infinite (5)
3. Factor of every number	iii) 50 (2)
4. Smallest prime number	iv) 7 (1)
5. Factors of a number	v) 2 (4)

C. Do as directed:

a) Find the H.C.F. of 16, 24 and 85.

Solution:

H.C.F. = 1

b) Find the L.C.M. of 16, 28 and 32

Solution:

$$\begin{array}{r|l} 2 & 16, 28, 32 \\ 2 & 8, 14, 16 \\ 2 & 4, 7, 8 \\ 2 & 2, 7, 4 \\ \hline & 1, 7, 2 \end{array}$$

L.C.M. $= 2 \times 2 \times 2 \times 2 \times 7 \times 2$
$= 224$

c) The H.C.F. of two numbers is 5 and L.C.M. is 60. If one of the numbers is 20, find the other number.

Solution: $\dfrac{L.C.M \times H.C.F}{One number} = $ The other number

$\Rightarrow$ The other number $= \dfrac{5 \times \cancel{60}^{\;3}}{\cancel{20}} = 5 \times 3 = 15$

Hence, The L.C.M of __15__, 20 is 60 and H.C.F. of __15__ & 20 is 5.

d) Find the greatest number which divides 90 and 405 without leaving a remainder.

Solution: H.C.F. of 90 and 405 $= 5 \times 3 \times 3$

$$\begin{array}{r|l} 5 & 90, 405 \\ 3 & 18, 81 \\ 3 & 6, 27 \\ \hline & 2, 9 \end{array}$$
$= 45$

e) Three bells of a temple began ringing at 9 a.m. The first bell rings after every 30 minutes and the second one rings after every 45 minutes and the third one rings after every hour. At what time will they ring together again?

Solution: The time the first bell rang after = 30 minutes
The time the second bell rang after = 45 minutes
The time the third bell rang after = 1 hour = 60 minutes
All bells rang together at =
L.C.M of 30, 45 & 60 $= 5 \times 3 \times 2 \times 3 \times 2 = 180$ minutes

$$\begin{array}{r|l} 5 & 30, 45, 60 \\ 3 & 6, 9, 12 \\ 2 & 2, 3, 4 \\ \hline & 1, 3, 2 \end{array}$$
60m = 1hr
180m = 3hr

9:00am + 3hr = 12:00am

Hence, At __12:00am__ bells will ring together again.