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 _**two**_.

c) _**One**_ 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 _**prime**_ numbers.

B. Match the following :

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

C. Do as directed:

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

Solution: HCF of 16, 24, 85 is 85.

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

Solution:

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

$2 \times 2 \times 2 \times 2 \times 2 \times 7 = 224$

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: $\dfrac{5 \times \overset{3}{\cancel{60}}}{\underset{1}{\cancel{20}}} = 15$ So the other number is 15.

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

Solution: HCF of 90 & 405 = 45

The greatest number which can divide 90 & 405 exactly is 45.

$$
\begin{array}{r}
4 \\
90\overline{)405} \\
-360 \\
\hline
45
\end{array}
$$

$$
\begin{array}{r}
2 \\
45\overline{)90} \\
-90 \\
\hline
0
\end{array}
$$

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: LCM of 45, 60, 30 = 180 mins

180 mins = 3 hours

So, They will ring together at every 3 hours.

$$
\begin{array}{r|lll}
5 & 30, & 45, & 60 \\
2 & 6, & 9, & 12 \\
3 & 3, & 9, & 6 \\
3 & 1, & 3, & 2 \\
2 & 1, & 1, & 2 \\
\hline
& 1, & 1, & 1
\end{array}
$$

LCM = $5 \times 2 \times 3 \times 3 \times 2 = 180$

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