Factors and Multiples

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 Prime numbers.

B. Match the following:

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

Ans- 1-iv, 2-iii, 3-i, 4-v, 5-ii

c. Do as directed!

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

Ans-

1	16, 24, 85
	16, 24, 85

So, H.C.F is 1.

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

Ans-

2	16, 28, 32
2	8, 14, 16
2	4, 7, 8
2	2, 7, 4
2	1, 7, 2
7	1, 7, 1
	1, 1, 1

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

$= 224$

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.

Ans- Given,

H.C.F = 5

L.C.M = 60

one number = 20

other number = $\frac{\text{H.C.F} \times \text{L.C.M}}{\text{one number}}$

$= \frac{\overset{1}{\cancel{5}} \times \overset{15}{\cancel{60}}}{\underset{1}{\cancel{20}}} = 15$

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

Ans-

$$\begin{array}{r} 4 \\ 90\overline{)405} \\ -\,360 \\ \hline 45 \end{array} \qquad \begin{array}{r} 2 \\ \overline{)90} \\ -\,90 \\ \hline 0 \end{array}$$

H.C.F of 90 and 405 = 45

Hence, 45 is the greatest number which divides 90 and 405 without leaving a remainder.

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

Ans- First bell rings after = 30 minutes.
Second bell rings after = 45 minutes.
& third bell rings after = 1 hour = 60 minutes

Required time =
L.C.M of (30, 45, 60)
minutes

3	30, 45, 60
5	10, 15, 20
2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

L.C.M = 3 x 5 x 2 x 2 x 3 =
180 minutes =
3 hours

∴ The three bells will ring together at 180 minutes or 3 hours.