

Revision Exercise (Chapter 8)

2- Find the LCM of:

i) 72, 80 and 252

Ans \rightarrow 72, 80 and 252

$$72 = 2 \times 2 \times 2 \times 3 \times 3$$

$$80 = 2 \times 2 \times 2 \times 2 \times 5$$

$$252 = 2 \times 2 \times 3 \times 3 \times 7$$

Common factors = 2

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7 = 5040$$

ii) 48, 66 and 120

Ans \rightarrow 48, 66 and 120

$$2 \mid 48, 66, 120$$

$$2 \mid 24, 33, 60$$

$$3 \mid 12, 33, 30$$

$$2 \mid 4, 11, 10$$

$$2, 11, 5$$

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 11 = 2640$$

6-i) Find the smallest number that completely divisible by 28 and 42

Ans \rightarrow ~~28~~ and 42 The smallest number that completely divisible of ~~28~~. 28 and 42 is their LCM.

$$2 \mid 28, 42$$

$$7 \mid 14, 21$$

$$2, 3$$

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

The smallest number that is completely divisible by 28 and 42 is 84.

(ii) Find the largest number that can divide 28 and 42 completely.

Ans → The largest number that can divide 28 and 42 completely is their hcf.

$$\begin{array}{r} 2 \overline{) 28, 42} \\ 7 \overline{) 14, 21} \\ 2, 3 \end{array}$$

$$HCF = 2 \times 7 = 14$$

The largest number that can divide 28 and 42 completely is their hcf. 14.

8. HCF of 108 and 450 =

$$\begin{array}{r} 2 \overline{) 108, 450} \\ 3 \overline{) 54, 225} \\ 3 \overline{) 18, 75} \\ 6, 25 \end{array}$$

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

Relationship =

$$\text{Product of two numbers} = HCF \times LCM$$

$$108 \times 450 = 18 \times$$

$$108 \times 450 = 48,600$$

$$LCM = \text{Product} \div HCF$$

$$= 48,600 \div 18$$

$$= 2700$$

So, the LCM is 2700.

1. Find the HCF of:

i) 108, 288 and 420

Ans \rightarrow 108, 288 and 420

$$2 \overline{) 108, 288, 420}$$

$$2 \overline{) 54, 144, 210}$$

$$3 \overline{) 27, 72, 105}$$

$$9, 24, 35$$

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

ii) 36, 54 and 138

Ans \rightarrow 36, 54 and 138

$$2 \overline{) 36, 54, 138}$$

$$3 \overline{) 18, 27, 69}$$

$$6, 9, 23$$

$$\text{HCF} = 2 \times 3 = 6$$

3. State true or false -

~~Ans~~ i) HCF of two prime numbers is 1. True

Example: 2 and 3 are prime numbers and their hcf is 1.

ii) HCF of two co-prime numbers is 1. True

Example: 15 and 16 are co-prime numbers and their hcf is 1.

iii) LCM of two prime numbers is equal to their product. True

Example: 5 and 7 are two prime numbers and their LCM = $5 \times 7 = 35$.

iv) LCM of two co-prime numbers is equal to their product. True

Example: 8 and 9 are two co-prime numbers and their

$$\text{LCM} = 8 \times 9 = 72$$

4. Relationship =

$$\text{Product of two numbers} = \text{HCF} \times \text{LCM}$$

$$\text{Product} = 12096$$

$$\text{HCF} = 36, \text{ LCM} =$$

$$\text{LCM} = \text{Product} \div \text{HCF}$$

$$= 12096 \div 36$$

$$= 336$$

So, the LCM ^{is} 336.

5. Relationship =

$$\text{Product of two numbers} = \text{HCF} \times \text{LCM}$$

$$\text{HCF} \times \text{LCM} = 1152$$

$$\text{One number} = 48, \text{ other number} =$$

$$\text{Other number} = \text{HCF} \times \text{LCM} \div \text{First number}$$

$$= 1152 \div 48$$

$$= 48$$

So, the other number ^{is} 48.

7. LCM of 140 and 168

$$\begin{array}{r|l}
 2 & 140, 168 \\
 2 & 70, 84 \\
 7 & 35, 42 \\
 & 5, 6
 \end{array}$$

$$\text{LCM} = 2 \times 2 \times 7 \times 5 \times 6 = 840$$

Relationship =

$$\text{Product of two numbers} = \text{H.C.F} \times \text{LCM}$$

Two numbers = 140, 168

$$\text{LCM} = 840, \text{HCF} =$$

$$\text{HCF} = \text{Product} \div \text{LCM}$$

$$= 140 \times 168 \div 840$$

$$= 23520 \div 840$$

$$= 28$$

So, the HCF is 28.