

Revision Exercise (Ch-8)

1. Find the HCF of;

(i) 108, 288 and 420 = 12

$$108 \overline{) 288} \begin{array}{l} 2 \\ -216 \\ \hline \end{array}$$

$$72 \overline{) 108} \begin{array}{l} 1 \\ -72 \\ \hline \end{array}$$

$$36 \overline{) 72} \begin{array}{l} 2 \\ -72 \\ \hline 0 \end{array}$$

$$36 \overline{) 420} \begin{array}{l} 11 \\ -36 \\ \hline \end{array}$$

$$60$$

$$-36$$

$$24 \overline{) 36} \begin{array}{l} 1 \\ -24 \\ \hline \end{array}$$

$$12 \overline{) 24} \begin{array}{l} 2 \\ -24 \\ \hline 0 \end{array}$$

$$12 \overline{) 24} \begin{array}{l} 2 \\ -24 \\ \hline 0 \end{array}$$

$$12$$

(ii) 36, 54 and 138 = 6

$$36 \overline{) 54} \begin{array}{l} 1 \\ -36 \\ \hline \end{array}$$

$$18 \overline{) 36} \begin{array}{l} 2 \\ -36 \\ \hline 0 \end{array}$$

$$18 \overline{) 36} \begin{array}{l} 2 \\ -36 \\ \hline 0 \end{array}$$

$$18$$

$$18 \overline{) 138} \begin{array}{l} 7 \\ -126 \\ \hline \end{array}$$

$$12 \overline{) 18} \begin{array}{l} 1 \\ -12 \\ \hline \end{array}$$

$$12 \overline{) 18} \begin{array}{l} 1 \\ -12 \\ \hline \end{array}$$

$$6 \overline{) 12} \begin{array}{l} 2 \\ -12 \\ \hline 0 \end{array}$$

$$6 \overline{) 12} \begin{array}{l} 2 \\ -12 \\ \hline 0 \end{array}$$

$$6$$

2. Find the LCM of;

(i) 72, 80 and 252

$$2 \overline{) 72, 80, 252}$$

$$2 \overline{) 36, 40, 126}$$

$$3 \overline{) 18, 20, 63}$$

$$3 \overline{) 6, 20, 21}$$

$$2 \overline{) 2, 20, 7}$$

$$1, 10, 7$$

$$2 \times 2 \times 3 \times 3 \times 2 \times 10 \times 7 =$$

$$= 2^3 \times 3^2 \times 10 \times 7$$

$$= 5040$$

(ii) 48, 66 and 120

$$2 \overline{) 48, 66, 120}$$

$$3 \overline{) 24, 33, 60} \quad 2 \times 3 \times 2 \times 2 \times 2 \times 11 \times 5$$

$$2 \overline{) 8, 11, 20} = 2^4 \times 3 \times 11 \times 5$$

$$2 \overline{) 4, 11, 10} = 2640$$

$$2, 11, 5$$

3. State true or false (Give an example in support of your answer in each case).

(i) H.C.F of two prime numbers is 1. True
Ex - 3 and 7, 7 and 9, 11 and 13

(ii) H.C.F of two co-prime numbers is 1. True
Ex - 4 and 9, 6 and 11, 21 and 37

(iii) L.C.M of two prime numbers is equal to their product.
Ex - 5 and 13 ($5 \times 13 = 65$)

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

Ex - 32 and 59 ($32 \times 59 = 1888$)

4. The product of two numbers is 12,096 and their HCF is 36. Find their LCM

Product of two numbers - 12,096

HCF is = 36

$$\text{LCM is} = \frac{\text{Their product}}{\text{HCF}} = \frac{12,096}{36} = 336$$

5. The product of the H.C.F and L.C.M of two numbers is 1152. If one number is 48, find the other one.

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

$$\text{First no (A)} = 48$$

$$\frac{\text{HCF} \times \text{LCM}}{A} = \frac{1152}{48} = 24$$

6. (i) Find the smallest number that is completely divisible by 28 and 42.

So, we need to find the ~~HCF~~ LCM of 28, 42

$$2 \overline{) 28, 42}$$

$$7 \overline{) 14, 21}$$

$$2, 3$$

$$2 \times 2 \times 3 \times 7 = 84$$

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

So, we need to find the H.C.F of 28 and 42 =

$$28 = 1, 2, 4, 7, 14, 28$$

$$42 = 1, 2, 3, 6, 7, 14, 21, 42$$

$$\text{CF} = 1, 2, 7, 14$$

$$\text{HCF} = 14$$

$$28 = 2 \times 2 \times 7$$

$$42 = 2 \times 3 \times 7$$

$$2 \times 7$$

$$\text{HCF} = 14$$

$$28 \overline{) 42}$$

$$- 28$$

$$\underline{14} \overline{) 28}$$

$$- 28$$

$$0$$

$$\text{HCF} = 14$$

7. Find the L.C.M of 140 and 168. Use the LCM obtained to find the HCF of the given numbers.

$$\begin{array}{r} 2 \overline{) 140, 168} \\ 2 \overline{) 70, 84} \\ 7 \overline{) 35, 42} \\ 5, 6 \end{array}$$

$$= 2 \times 2 \times 7 \times 5 \times 6 = 840$$

$$= \text{HCF} = \frac{A \times B}{\text{LCM}} = \frac{140 \times 168}{840} = 28$$

8. Find the HCF of 108 and 450 and use the HCF obtained to find the LCM of the given numbers.

$$\begin{array}{r} 108 \overline{) 450} \quad 4 \\ - 432 \\ \hline 18 \overline{) 108} \quad 6 \\ - 108 \\ \hline 0 \end{array}$$

$$= 18$$

$$= \text{LCM} = \frac{A \times B}{\text{HCF}} = \frac{108 \times 450}{18} = 2700$$