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27.06.21

Revision Exercise
Ch-8

① Find the HCF of :-

i) 108, 288 and 420

Ans 108 = 1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 18, 20, 30, 36, 45, 60, 90, 180

288 = 1, 2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 32, 36, 48, 72, 96, 144, 288.

420 = 1, 2, 3, 4, 5, 6, 7, 10, 12, 14, 15, 20, 21, 28, 30, 35, 42, 60, 70, 84, 105, 140, 210, 420.

Common factors = 1, 2, 3, 4, 6, 12.
HCF = 12

ii) 36, 54, 138.

Ans 36 = 1, 2, 3, 4, 6, 9, 12, 18 and 36

54 = 1, 2, 3, 6, 9, 18, 27, 54

138 = 1, 2, 3, 6, 23, ~~46~~ 46, 69, 138

Common factors = 1, 2, 3, 6.
HCF = 6

3) i) True

ii) True

iii) ~~True~~

iv) True

4) The ~~product~~ product of two numbers is 12096 and their HCF is 36. Find their LCM.

5) ~~The product of the HCF and~~

Ans product of the two no.s = 12096

Its HCF is 36

$$\text{LCM} = 12096 \div 36$$

6) ~~HCF and LCM of the two no.s = 50 and 350~~

~~HCF of one no. is~~

7) product of the two no.s = 1152

If one no. is 48

$$\begin{aligned} \text{Another no.} &= 1152 \div 48 \\ &= 231 \end{aligned}$$

Required No. = 231

So, the other no. is 23124

$$\begin{array}{r} 23124 \\ 48 \overline{) 1152} \\ \underline{- 96} \\ 192 \\ \underline{- 192} \\ 0 \end{array}$$

(6) The smallest number that is completely divisible by 28 and 42 is :- First we have to find the LCM of 28 and 42.
~~28~~

LCM of 28 and 42 :-

$$28 = 28, 56, 84$$

$$42 = 42, 84$$

$$CM = 84$$

$$\text{Required No.} = 84$$

$$\text{LCM} = 84$$

ii) To find the largest no. that can divide 28 and 42 is :- First we have to find the HCF of 28 and 42

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

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

$$= 7 \times 2 = 14$$

$$\text{Required No.} = 14$$

$$\text{HCF} = 14$$

(7) First we have to find the LCM of 140 and 168 :-

$$140 = 140, 280, 420, 560, 700, 840, 980$$

$$168 = 112, 126, 140, 154, 168$$

$$168 :- 168, 336, 504, 672, 840, 1008, 1176, 1344, 1512, 1680$$

$$CM = 840$$

Then we have to multiply 140 and 168

$$= 23420$$

$$140$$

$$168$$

$$\hline 1020$$

$$1840 \times 127 = 23420 \text{ (product)}$$

$$140 \times 168$$

$$\hline 23420$$

Now, we have to divide 23,420 and

$$840 = 23,420 \div 840$$

=

$$840 \overline{) 23,420}$$

$$\begin{array}{r}
 28 \\
 840 \overline{) 23,520} \\
 \underline{-1680} \\
 6720 \\
 \underline{-6720} \\
 0
 \end{array}$$

So, the LCM HCF of the given no.
is 28.

Q) First we have to find the HCF of 108 and 450:

$$\begin{array}{r}
 108 = 2 \overline{) 108} \\
 \underline{2 } \\
 54 \\
 \underline{3 } \\
 27 \\
 \underline{3 } \\
 9 \\
 \underline{3 } \\
 3
 \end{array}$$

$$\begin{array}{r}
 450 = 2 \overline{) 450} \\
 \underline{2 } \\
 225 \\
 \underline{5 } \\
 45 \\
 \underline{5 } \\
 9 \\
 \underline{3 } \\
 3
 \end{array}$$

$$\begin{aligned}
 108 &= 2 \times 2 \times 3 \times 3 \times 3 \\
 450 &= 2 \times 5 \times 5 \times 3 \times 3
 \end{aligned}$$

$$\begin{aligned}
 &= 2 \times 3 \times 3 = 18 \\
 &\text{HCF} = 18
 \end{aligned}$$

multiply

Then we have to divide 18 108 and 450

$$\begin{array}{r}
 450 \\
 \times 108 \\
 \hline
 3600 \\
 + 0000 \\
 \hline
 48600
 \end{array}$$

$$\begin{aligned}
 \text{The } n \text{ we have to divide } 48,600 \text{ and } 18 &= 48,600 \div 18 \\
 &= 27
 \end{aligned}$$

$$\begin{array}{r}
 27 \\
 18 \overline{) 48,600} \\
 \underline{-36} \\
 126 \\
 \underline{-126} \\
 0
 \end{array}$$

$$\begin{aligned}
 \text{Required no.} \\
 &= 27
 \end{aligned}$$

(Q1) 72, 80 and 252

$$\begin{array}{r|l}
 2 & 72, 80, 252 \\
 2 & 36, 40, 126 \\
 2 & 18, 20, 63 \\
 3 & 9, 10, 63 \\
 3 & 3, 10, 21 \\
 & 1, 10, 7
 \end{array}$$

$$LCM = 2 \times 2 \times 2 \times 3 \times 3 \times 7 \times 10 = 5040$$

$$\begin{array}{r|l}
 2 & 48, 66, 120 \\
 2 & 24, 33, 60 \\
 2 & 12, 33, 30 \\
 3 & 6, 33, 15 \\
 & 2, 11, 5
 \end{array}$$

$$LCM = 2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 11 = 2640$$