

Hw
29.6.21

Revision Exercise (Ch-8)

①

Date _____
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① i) 108, 288, 420

$$\begin{array}{r} 108 \mid 288 \mid 2 \\ - 216 \\ \hline \end{array}$$

$$\begin{array}{r} 36 \mid 420 \mid 11 \\ - 396 \\ \hline \end{array}$$

$$\begin{array}{r} 72 \mid 108 \mid 1 \\ - 72 \\ \hline \end{array}$$

$$\begin{array}{r} 24 \mid 36 \mid 1 \\ - 24 \\ \hline \end{array}$$

$$\begin{array}{r} 36 \mid 72 \mid 2 \\ - 72 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 12 \mid 24 \mid 2 \\ - 24 \\ \hline 0 \end{array}$$

HCF = 12

ii) 36, 54 and 138

$$\begin{array}{r} 54 \mid 138 \mid 2 \\ - 108 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \mid 36 \mid 6 \\ - 36 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 30 \mid 54 \mid 1 \\ - 30 \\ \hline \end{array}$$

$$\begin{array}{r} 24 \mid 30 \mid 1 \Rightarrow \text{HCF} = 6 \\ - 24 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \mid 24 \mid 4 \\ - 24 \\ \hline 0 \end{array}$$

② i) 72, 80 and 252

$$2 \mid 72, 80, 252$$

$$2 \mid 36, 40, 126$$

$$2 \mid 18, 20, 63$$

$$3 \mid 9, 10, 63$$

$$3 \mid 3, 10, 21$$

$$1, 10, 7$$

ii) 48, 66 and 120

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

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

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

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

$$2, 11, 5$$

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

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 3 \times 10 \times 7 = 5040$$

- 3) i) HCF of two prime numbers is 1. True
HCF of 2 and 3 is 1.
- ii) HCF of two co-prime numbers is 1.
HCF of 8 and 3 is 1.
- iii) LCM of two prime numbers is equal to their product.
True. The LCM of 2 and 3 is 6, the product of 2 and 3 is also 6.
- iv) LCM of two co-prime numbers is equal to their product.
True. LCM of 5 and 3 is 15. Their product is also 15.

- 4) The product of two numbers = 12096
their HCF = 36
their LCM =

$$\frac{\text{Product of the two numbers}}{\text{HCF}}$$

$$= \frac{12096}{36} = 336$$

So, their LCM is 336

- 5) The product of the HCF and the LCM
of the two numbers = 1152
one of the numbers = 48
the other number =

$$\frac{\text{Product of the HCF and LCM}}{\text{other number}}$$

$$= \frac{1152}{48} = 24$$

So the other number is 24.

6.) The smallest number that is completely divisible by 28 and 42 is =

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

$$28 = 2 \times 2 \times 7 = 2^2 \times 7^1$$

$$42 = 2 \times 3 \times 7 = 2^1 \times 3^1 \times 7^1$$

$$\text{LCM} = 2^2 \times 3^1 \times 7^1$$

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

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

ii.) The largest number that can divide 28 and 42 is =

$$\begin{array}{r} 28 \overline{) 42} \quad 1 \\ \underline{-28} \\ 14 \overline{) 28} \quad 2 \\ \underline{-28} \\ 0 \end{array}$$

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

7.) The LCM of 140 and 168 =

$2 \overline{) 140, 168}$	$\text{LCM} = 2 \times 2 \times 7 \times 5 \times 6 = 840$
$2 \overline{) 70, 84}$	
$7 \overline{) 35, 42}$	
$5, 6$	$\frac{\text{1st no} \times \text{2nd no}}{\text{LCM}} = \text{HCF} =$

$$23520 = 28$$

$$840$$

~~So, the hcf and lcm is 80 and 28.~~
So, the hcf is 28 and lcm is 840.

8. The HCF of 108 and 450 =

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

HCF = 18

$$\text{LCM} = \frac{\text{1st no} \times \text{2nd no}}{\text{HCF}} = \frac{48600}{18} = 2700$$

The LCM and HCF is 2700 and 18.