

H.W.
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Division Exercise (Chapter 8)

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1: i) 108, 288, 420

$$288 \overline{) 420} 1$$

$$\underline{288}$$

$$132 \overline{) 288} 2$$

$$\underline{264}$$

$$24 \overline{) 132} 5$$

$$\underline{120}$$

$$12 \overline{) 24} 2$$

$$\underline{24}$$

$$00$$

$$12 \overline{) 108} 9$$

$$\underline{108}$$

$$000$$

HCF = 12

ii) 36, 54, 138

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

$$\underline{108}$$

$$30 \overline{) 54} 1$$

$$\underline{30}$$

$$24 \overline{) 30} 1$$

$$\underline{24}$$

$$6 \overline{) 24} 4$$

$$\underline{24}$$

$$00$$

$$8 \overline{) 36} 8$$

$$\underline{36}$$

$$00$$

HCF = 6

2: i) iii) 72, 80, 252

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$$\begin{array}{l}
 2 \cdot ii) \quad 2 \mid 72, 80, 252 \\
 \quad \quad 2 \mid 36, 40, 126 \\
 \quad \quad 2 \mid 18, 20, 63 \\
 \quad \quad 3 \mid 9, 10, 63 \\
 \quad \quad \quad 3, 10, 31
 \end{array}$$

$$LCM = 2 \times 2 \times 2 \times 3 \times 3 \times 10 \times 31 = 5040$$

$$\begin{array}{l}
 ii) \quad 2 \mid 48, 66, 120 \\
 \quad \quad 3 \mid 24, 33, 60 \\
 \quad \quad 2 \mid 8, 11, 30 \\
 \quad \quad \quad 4, 11, 15
 \end{array}$$

$$LCM = 2 \times 3 \times 2 \times 4 \times 11 \times 5 = 2640$$

3. i) True (3 and 5 are two prime numbers and their HCF is 1)

ii) True (4 and 9 are two coprime numbers and their HCF is 1)

iii) True (2 and 5 are two prime numbers and their $LCM = 2 \times 5 = 10$)

iv) True (4 and 9 are two co-prime numbers and their $LCM = 4 \times 9 = 36$)

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4. LCM of two number = $\frac{\text{their product}}{\text{by their HCF}}$

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

5. The other number = $\frac{\text{Product of HCF and One number}}{\text{One number}}$

$$\text{The other number} = \frac{1152}{48} = 24$$

$$6. \begin{array}{r|l} 12 & 28, 42 \\ 7 & 14, 21 \\ \hline & 2, 3 \end{array}$$

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

i) 84 is the smallest number that is divisible by 28 and 42.

ii) We know that largest number which can ~~divisible~~ divide 28 and 42 completely will be their HCF.

$$28 \overline{) 42} 1$$

$$\underline{28}$$

$$14 \overline{) 28} 2$$

$$\underline{28}$$

$$00$$

$$\text{HCF} = 14$$

$$\text{HCF of 28 and 42} = 14$$

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7. Numbers are 140 and 168

L.C.M. of 140 and 168

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

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

$$\text{H.C.F.} = \frac{\text{1st number} \times \text{2nd number}}{\text{L.C.M.}}$$

$$= \frac{140 \times 168}{840} = 28$$

8. Numbers are given: 108 and 450

$$\begin{array}{r|l}
 108 & 450 & 4 \\
 \hline
 & 432 & \\
 \hline
 18 & 108 & 6 \\
 \hline
 & 108 & \\
 \hline
 & 0 &
 \end{array}$$

$$\text{H.C.F. of } 108 \text{ and } 450 = 18$$

$$\frac{\text{1st number} \times \text{2nd number}}{\text{H.C.F.}}$$

$$= \frac{108 \times 450}{18} = 2700$$