

Problems on HCF and LCM



For two given natural numbers,

$$(\text{One number}) \times (\text{Other number}) = (\text{Their HCF}) \times (\text{Their LCM})$$

This is true only when HCF is a factor of LCM or $(\text{HCF})^2$ is a factor of product of two numbers.



$$\text{Thus, HCF} = \frac{(\text{One number}) \times (\text{Other number})}{(\text{Their LCM})}$$

$$\text{Also, LCM} = \frac{(\text{One number}) \times (\text{Other number})}{(\text{Their HCF})}$$



Let us understand with some examples:

Example: If the LCM of 77 and 99 is 693, then find HCF.

Solution: $\text{LCM} \times \text{HCF} = \text{One number} \times \text{Other number}$

$$\text{Or } 693 \times \text{HCF} = 77 \times 99 \quad \text{or} \quad \text{HCF} = \frac{77 \times 99}{693} = 11$$

Hence, the required HCF is 11.



Example: The product of two numbers is 2160 and their HCF is 12. Find their LCM.

Solution: $\text{LCM} \times \text{HCF} = \text{One number} \times \text{Other number}$

$$\text{Or } \text{LCM} \times 12 = 2160 \quad \text{or} \quad \text{LCM} = \frac{2160}{12} = 180$$

Hence, the required LCM is 180.