



28. If the angles of elevation of the top of a tower from three collinear points A, B and C, on a line leading to the foot of the tower, are 30° , 45° and 60° respectively, then the ratio, AB : BC, is

- (1) $\sqrt{3}:1$ (2) $\sqrt{3} : \sqrt{2}$ (3) $1: \sqrt{3}$ (4) $2 : 3$

Answer:

<p style="text-align: center;"> 60° 45° 30° </p>	<p>In $\triangle AFT$ $\tan 30^\circ = \frac{FT}{AF}$ or $AF = \sqrt{3} FT \rightarrow (1)$</p> $\frac{AB}{BC} = \frac{AF - BF}{BF - CF} = \frac{\sqrt{3} FT - FT}{FT - FT/\sqrt{3}} = \frac{\sqrt{3} - 1}{1 - 1/\sqrt{3}}$ <p>or $\frac{AB}{BC} = \frac{(\sqrt{3} - 1)(\sqrt{3})}{(\sqrt{3} - 1)} = \sqrt{3}$</p> <p>Correct option is (1) $\sqrt{3}:1$</p>
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