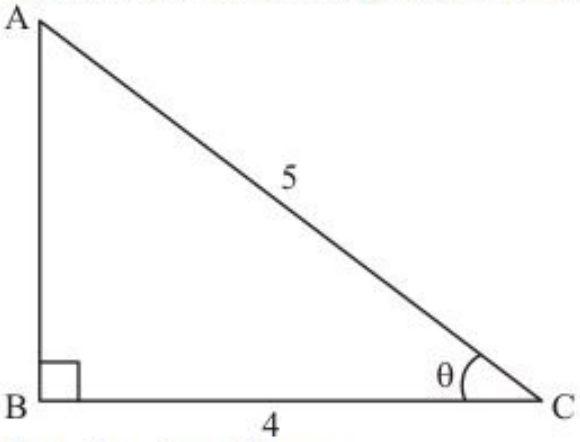
Trigonometric Identities Ex 6.2 Q1

Answer :

Given: $\cos\theta = \frac{4}{5}$

Now, we have to find all the other trigonometric ratios.

We have the following right angle triangle.



From the above figure,

$$\text{Perpendicular} = \sqrt{\text{Hypotenuse}^2 - \text{Base}^2}$$

$$\Rightarrow AB = \sqrt{AC^2 - BC^2}$$

$$\Rightarrow AB = \sqrt{5^2 - 4^2}$$

$$\Rightarrow AB = 3$$

Therefore,

$$\sin\theta = \frac{AB}{AC} = \frac{3}{5}$$

$$\operatorname{cosec}\theta = \frac{AC}{AB} = \frac{5}{3}$$

$$\sec\theta = \frac{AC}{BC} = \frac{5}{4}$$

$$\tan\theta = \frac{AB}{BC} = \frac{3}{4}$$

$$\cot\theta = \frac{BC}{AB} = \frac{4}{3}$$

********** END **********