



Therefore,

$$\sec \theta = \frac{2}{1}$$

$$\text{Now, } \tan \theta = \frac{\text{Perpendicular}}{\text{Base}}$$

Therefore,

$$\tan \theta = \frac{\sqrt{3}}{1}$$

$$\text{Now, } \cot \theta = \frac{\text{Base}}{\text{Perpendicular}}$$

Therefore,

$$\cot \theta = \frac{1}{\sqrt{3}}$$

$$\text{(vii) Given: } \cos \theta = \frac{7}{25} \dots\dots (1)$$

By definition,

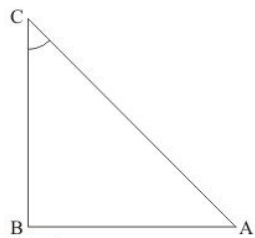
$$\cos \theta = \frac{\text{Base}}{\text{Hypotenuse}} \dots\dots (2)$$

By Comparing (1) and (2)

We get,

Base = 7 and

Hypotenuse = 25



Therefore,

By Pythagoras theorem,

$$AC^2 = AB^2 + BC^2$$

Now we substitute the value of base side (AB) and hypotenuse (AC) and get the perpendicular side (BC)

$$25^2 = 7^2 + BC^2$$

$$BC^2 = 25^2 - 7^2$$

$$BC^2 = 625 - 49$$

$$BC^2 = 576$$

$$BC = \sqrt{576}$$

$$BC = 24$$

Hence, Perpendicular side = 24

$$\text{Now, } \sin \theta = \frac{\text{Perpendicular}}{\text{Hypotenuse}}$$

Therefore,

$$\sin \theta = \frac{24}{25}$$

$$\text{Now, cosec } \theta = \frac{1}{\sin \theta}$$

Therefore,

$$\text{cosec } \theta = \frac{\text{Hypotenuse}}{\text{Perpendicular}}$$

$$\text{cosec } \theta = \frac{25}{24}$$

$$\text{Now, sec } \theta = \frac{1}{\cos \theta}$$

Therefore,

$$\sec \theta = \frac{\text{Hypotenuse}}{\text{Base}}$$

$$\sec \theta = \frac{25}{7}$$

$$\text{Now, tan } \theta = \frac{\text{Perpendicular}}{\text{Base}}$$

Therefore,

$$\tan \theta = \frac{24}{7}$$

$$\text{Now, cot } \theta = \frac{1}{\tan \theta}$$

Therefore,

$$\cot \theta = \frac{\text{Base}}{\text{Perpendicular}}$$

$$\cot \theta = \frac{7}{24}$$

$$\text{(viii) Given: } \tan \theta = \frac{8}{15} \dots\dots (1)$$

By definition,

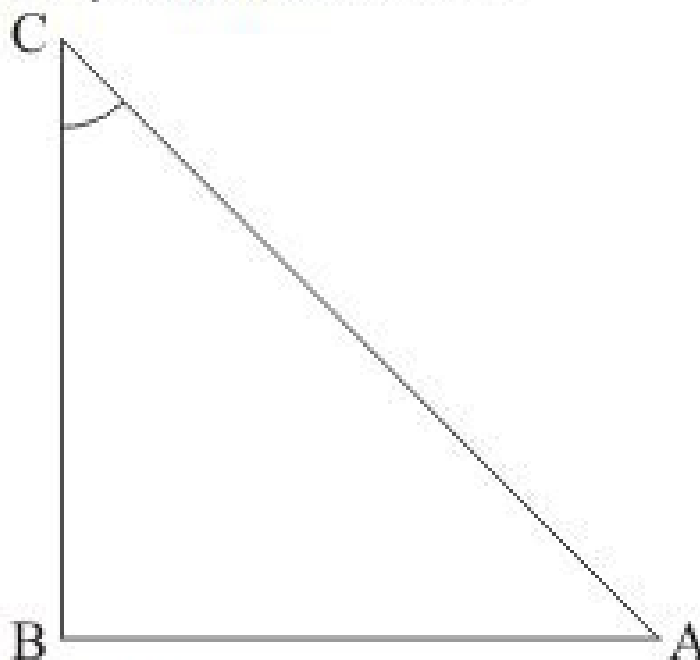
$$\tan \theta = \frac{\text{Perpendicular}}{\text{Base}} \dots\dots (2)$$

By Comparing (1) and (2)

We get,

Base = 15 and

Perpendicular side = 8



Therefore,

By Pythagoras theorem,

$$AC^2 = AB^2 + BC^2$$

Now we substitute the value of base side (AB) and the perpendicular side (BC) and get hypotenuse (AC)

$$AC^2 = 15^2 + 8^2$$

$$AC^2 = 225 + 64$$

$$AC^2 = 289$$

$$AC = \sqrt{289}$$

$$AC = 17$$

Hence, Hypotenuse = 17

$$\text{Now, } \sin \theta = \frac{\text{Perpendicular}}{\text{Hypotenuse}}$$

Therefore,

$$\sin \theta = \frac{8}{17}$$

$$\text{Now, } \operatorname{cosec} \theta = \frac{1}{\sin \theta}$$

Therefore,

$$\operatorname{cosec} \theta = \frac{\text{Hypotenuse}}{\text{Perpendicular}}$$

$$\operatorname{cosec} \theta = \frac{17}{8}$$

$$\text{Now, } \cos \theta = \frac{\text{Base}}{\text{Hypotenuse}}$$

\*\*\*\*\* END \*\*\*\*\*