Therefore,

$$\cos\theta = \frac{15}{17}$$

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

Therefore,

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

$$\sec\theta = \frac{17}{15}$$

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

Therefore,

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

$$\cot\theta = \frac{15}{8}$$

(ix) Given: $\cot\theta = \frac{12}{5}$ .....(1)

By definition,

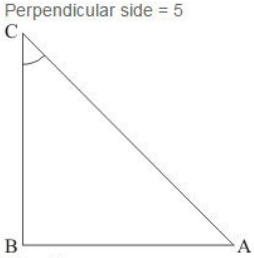
$$\cot\theta = \frac{1}{\tan\theta}$$

$$\cot\theta = \frac{\text{Base}}{\text{Perpendicular}}$$ ..... (2)

We get,

Base = 12 and

Perpendicular side = 5



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*)

$$AC^2 = 12^2 + 5^2$$

$$AC^2 = 144 + 25$$

$$AC^2 = 169$$

$$AC = \sqrt{169}$$

$$AC = 13$$

Hence, Hypotenuse = 13

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

Therefore,

$$\sin\theta = \frac{5}{13}$$

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

Therefore,

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

$$\operatorname{cosec}\theta = \frac{13}{5}$$

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

Therefore,

$$\cos\theta = \frac{12}{13}$$

Now, $\sec\theta = \dfrac{1}{\cos\theta}$

Therefore,

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

$$\sec\theta = \frac{13}{12}$$

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

Therefore,

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

$$\tan\theta = \frac{5}{12}$$

(x) Given: $\sec\theta = \frac{13}{5}$ .....(1)

By definition,

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

$$\sec\theta = \frac{\text{Hypotenuse}}{\text{Base}}$$ ..... (2)

By Comparing (1) and (2)

We get,

Base = 5 and

Hypotenuse = 13

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