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

Therefore,

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

$$\cot A = \frac{4}{3}$$

(iii) Given: $\tan\theta = \frac{11}{1}$ .....(1)

By definition,

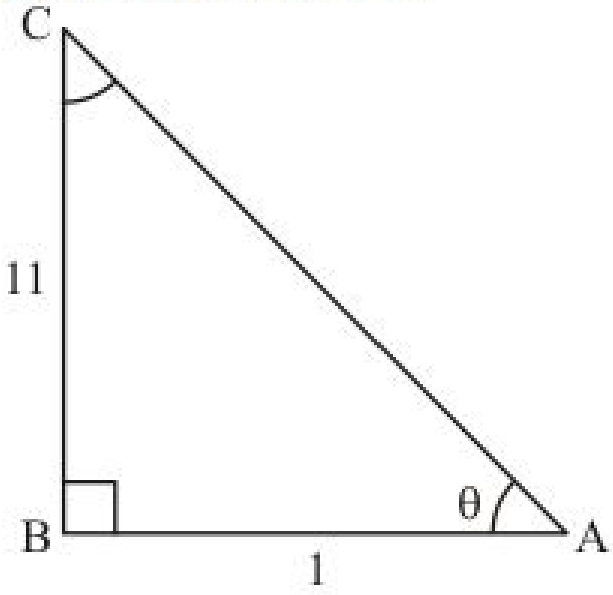
$$\tan\theta = \frac{\text{Perpendicular}}{\text{Base}}$$ ..... (2)

By Comparing (1) and (2)

We get,

Base = 1 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)

$AC^2 = 1^2 + 11^2$

$AC^2 = 1 + 121$

$AC^2 = 122$

$AC = \sqrt{122}$

Hence, Hypotenuse = $\sqrt{122}$

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

Therefore,

$\sin\theta = \dfrac{11}{\sqrt{122}}$

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

Therefore,

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

$\operatorname{cosec}\theta = \dfrac{\sqrt{122}}{11}$

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

Therefore,

$$\cos\theta = \frac{1}{\sqrt{122}}$$

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

Therefore,

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

$$\sec\theta = \frac{\sqrt{122}}{1}$$

$$\sec\theta = \sqrt{122}$$

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

Therefore,

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

$$\cot\theta = \frac{1}{11}$$

(iv) Given: $\sin\theta = \frac{11}{15}$ .....(1)

By definition,

$\sin\theta = \frac{\text{Perpendiular}}{\text{Hypotenuse}}$ ..... (2)

By Comparing (1) and (2)

We get,

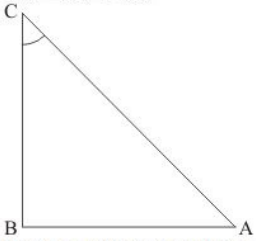
Perpendicular side = 11 and

Hypotenuse = 15

Therefore,

By Pythagoras theorem,

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



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

$$15^2 = AB^2 + 11^2$$

$$AB^2 = 15^2 - 11^2$$

$$AB^2 = 225 - 121$$

$$AB^2 = 104$$

$$AB = \sqrt{104}$$

$$AB = \sqrt{2 \times 2 \times 2 \times 13}$$

$$AB = 2\sqrt{2 \times 13}$$

$$AB = 2\sqrt{26}$$

Hence, Base = $2\sqrt{26}$

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

Therefore,

$$\cos\theta = \frac{2\sqrt{26}}{15}$$

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

$$\sin\theta$$

Therefore,

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

$$\text{cosec}\,\theta = \frac{15}{11}$$

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

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