

In rt ΔABC
 $AC^2 = AB^2 + BC^2$ (Pythagoras theorem)
 $= 24^2 + 7^2$
 $= 576 + 49$
 $= 625$
 $AC = \sqrt{625}$
 $= 25 \text{ cm}$

$$\sin A = \frac{\text{o.s.}}{h}$$

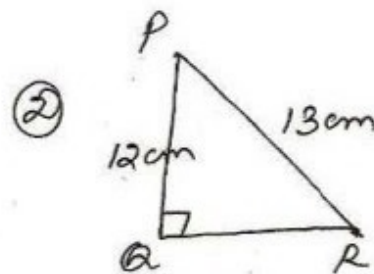
$$= \frac{7}{25}$$

$$\cos A = \frac{\text{a.s.}}{h}$$

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

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

$$\cos C = \frac{7}{25}$$



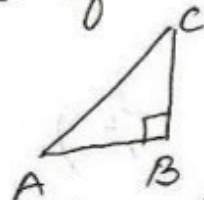
In rt ΔPQR
 $QR^2 = PR^2 - PQ^2$ (pyth. th.)
 $= 13^2 - 12^2$
 $= 169 - 144$
 $= 25$
 $\Rightarrow QR = \sqrt{25}$
 $= 5 \text{ cm}$

$$\tan P - \cot R$$

$$= \frac{5}{12} - \frac{5}{12}$$

$$= 0$$

③ If $\sin A = \frac{3}{4}$ ($\frac{\text{o.s.}}{h}$)



let $BC = 3k$
 $AC = 4k$

In rt ΔABC
 $AC^2 = AB^2 + BC^2$ (py. th.)
 $(4k)^2 = AB^2 + (3k)^2$

$$\Rightarrow AB^2 = 16k^2 - 9k^2$$

$$= 7k^2$$

$$\Rightarrow AB = \sqrt{7}k$$

$$\cos A = \frac{\sqrt{7}k}{4k}$$

$$\tan A = \frac{3k}{\sqrt{7}k}$$