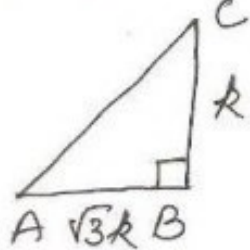


⑨ $\tan A = \frac{1}{\sqrt{3}} \left(\frac{o.s}{a.s} \right)$



In rt. ΔABC

$$AC^2 = AB^2 + BC^2 \text{ (Py. th.)}$$

$$= (\sqrt{3}k)^2 + k^2$$

$$= 3k^2 + k^2$$

$$= 4k^2$$

$$\Rightarrow AC = \sqrt{4k^2}$$

$$= 2k$$

①) $\sin A \cos C + \cos A \sin C$

$$= \frac{k}{2k} \times \frac{k}{2k} + \frac{\sqrt{3}k}{2k} \times \frac{\sqrt{3}k}{2k}$$

$$= \frac{1}{4} + \frac{3}{4}$$

$$= \frac{4}{4}$$

$$= 1$$

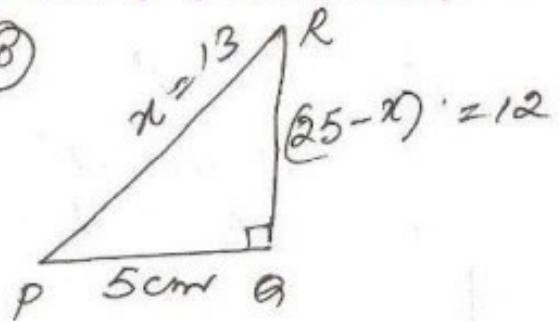
②) $\cos A \cos C - \sin A \sin C$

$$= \frac{\sqrt{3}k}{2k} \times \frac{k}{2k} - \frac{k}{2k} \times \frac{\sqrt{3}k}{2k}$$

$$= \frac{\sqrt{3}}{4} - \frac{\sqrt{3}}{4}$$

$$= 0$$

⑩



$$PR + QR = 25$$

$$\text{let } PR = x \text{ cm}$$

$$QR = (25 - x) \text{ cm}$$

In rt. ΔPQR

$$PR^2 = PQ^2 + QR^2 \text{ (Py. th.)}$$

$$x^2 = 5^2 + (25 - x)^2$$

$$\Rightarrow x^2 = 25 + 625 + x^2 - 50x$$

$$\Rightarrow 50x = 650$$

$$\Rightarrow x = 13$$

$$\therefore PR = x = 13 \text{ cm}$$

$$QR = 25 - 13$$

$$= 12 \text{ cm}$$

$$\sin P = \frac{12}{13}$$

$$\cos P = \frac{5}{13}$$

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