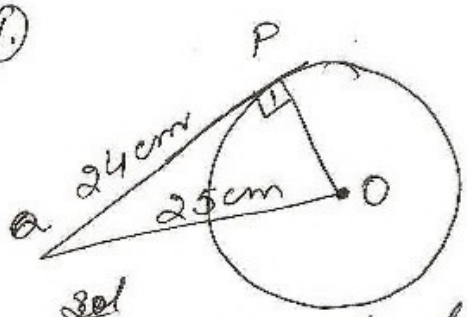
(1.)



Sol

$\angle 1 = 90^\circ$ (angle between radius and tangent at point of contact)

In rt $\triangle$ QPO

$OP^2 = OQ^2 - PQ^2$ (Pythagoras theorem)

$= 25^2 - 24^2$

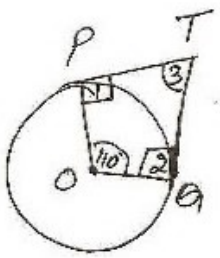
$= 625 - 576$

$\Rightarrow OP^2 = 49$

$\Rightarrow OP = \sqrt{49}$

$= 7$ cm (A)

(2)



Sol

$\angle 1 = \angle 2 = 90^\circ$ (angle between radius and tangent at point of contact)

In $\square$ POQT

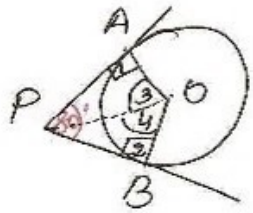
$\angle 1 + \angle 2 + \angle 3 + \angle POQ = 360^\circ$ (angle sum prop. of $\square$)

$90^\circ + 90^\circ + 110^\circ + \angle 3 = 360^\circ$

$\Rightarrow \angle 3 = 360 - 290$

$\angle PTQ = 70^\circ$ (B)

(3)



$\angle 1 = \angle 2 = 90^\circ$ (angle between radius and tangent at point of contact)

In $\square$ PAOB

$\angle APB + \angle 1 + \angle 2 + \angle AOB = 360^\circ$ (angle sum prop. of $\square$)

$80^\circ + 90^\circ + 90^\circ + \angle AOB = 360^\circ$

$\Rightarrow \angle AOB = 360 - 260$

$= 100^\circ$

(A)

$\triangle POA \cong \triangle POB$ by RHS prop

$\therefore \angle 3 = \angle 4$ (cpct)

$\angle 3 = \frac{1}{2} \angle AOB$

$= \frac{1}{2} \times 100$

$= 50^\circ$ (A)