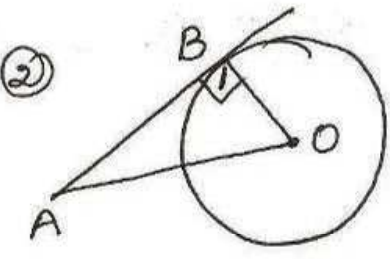


□ PBOA is cyclic
 $\therefore \angle 1 + \angle 2 = 180^\circ$ [opp. angles of cyclic □ are suppl.]
 $60^\circ + \angle 2 = 180^\circ$
 $\Rightarrow \angle 2 = 180^\circ - 60^\circ$
 $= 120^\circ$
 \therefore False



False
 eg $\angle 1 = 90^\circ$ ($r \perp$ tangent)
 let $OA = 5\text{cm}$, $OB = 4\text{cm}$
 In rt ΔABO
 $AB = \sqrt{OA^2 - OB^2}$ [pythagoras theorem]

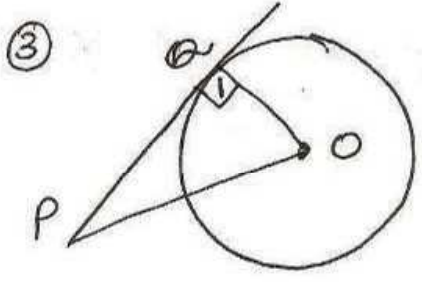
$$= \sqrt{5^2 - 4^2}$$

$$= \sqrt{25 - 16}$$

$$= \sqrt{9}$$

$$= 3\text{cm}$$

\therefore tangent < radius



$\angle 1 = 90^\circ$ ($r \perp$ tangent)
 In rt ΔPAO
 $OP > PA$ [In a rt. Δ hypot is longest side]
True