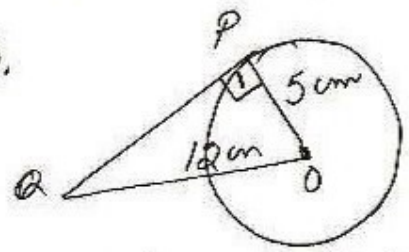
① Infinitely Many

2 (i) one
(ii) Secant
(iv) point of contact
(iii) two

3.



Sol $\angle 1 = 90^\circ$ ($\angle$ between r, t at pt. of contact)

In rt $\triangle OPQ$

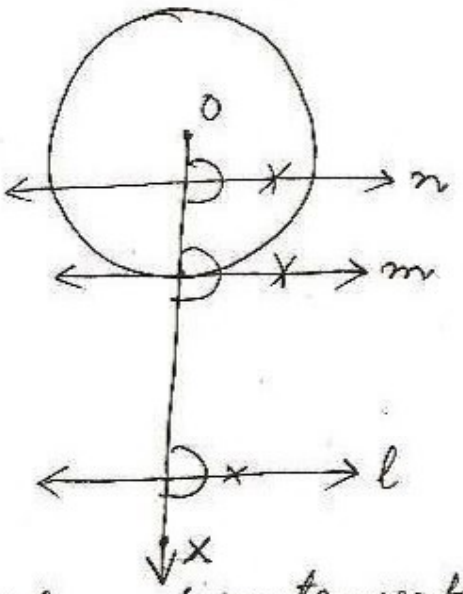
$PQ^2 = OQ^2 - OP^2$ (Pythagoras theorem)

$= 12^2 - 5^2$

$= 144 - 25$

$PQ = \sqrt{119}$ cm (D)

④



$m \parallel l$ (m tangent)

$n \parallel l$ (n Secant)