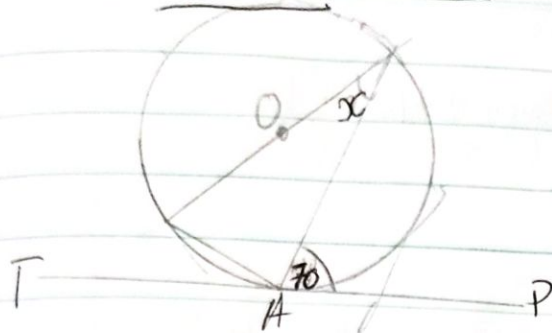


Mathematics

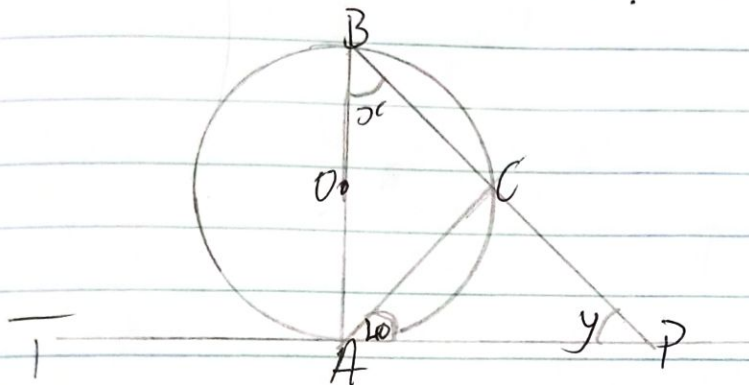
(a)



Soln

$$x = 70^\circ \text{ (Alternate Angles)}$$

(b)



Soln

$$\angle BAP = 90^\circ \text{ (Perpendicular angle } = 90^\circ)$$

$$\text{Let } \angle BAC = m^\circ$$

$$40^\circ + m^\circ = 90^\circ$$

$$m^\circ = 90^\circ - 40^\circ$$

$$m^\circ = 50^\circ$$

$$\text{Let } \angle BCA = t$$

$$t + m + y = 180^\circ \text{ (Sum of angles in a triangle } = 180^\circ)$$

$$t + 50 + y = 180^\circ$$

$$t + y = 180^\circ - 50^\circ$$

$$t + y = 130^\circ$$

$$t = \frac{130^\circ}{2} = 65^\circ$$

$$y = \frac{130^\circ}{2} = 65^\circ$$

$$\text{Let } \angle ACP = d^\circ$$

$$d^\circ + t^\circ = 180^\circ \text{ (sum of angles in a straight line } = 180^\circ)$$

$$d^\circ + 65^\circ = 180^\circ$$

$$d^\circ = 180^\circ - 65^\circ$$

$$d^\circ = 115^\circ$$

$$x^\circ + 40^\circ + d^\circ = 180^\circ \text{ (sum of angles in a triangle } = 180^\circ)$$

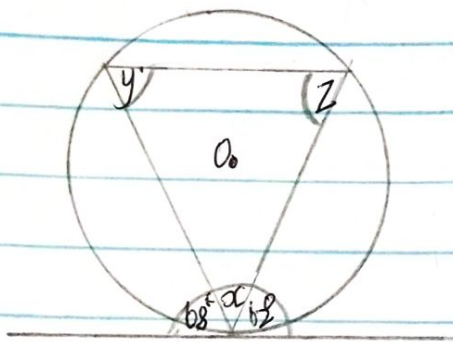
$$x^\circ + 40^\circ + 115^\circ = 180^\circ$$

$$x^\circ = 180^\circ - 115^\circ - 40^\circ$$

$$x^\circ = 180^\circ - 155^\circ$$

$$x^\circ = 25^\circ$$

(C)



Soln

$$68^\circ + 62^\circ + x^\circ = 180^\circ \text{ (sum of angles in a straight line } = 180^\circ)$$

$$130^\circ + x^\circ = 180^\circ$$

$$x^\circ = 180^\circ - 130^\circ$$

$$x^\circ = 50^\circ$$

$$x^\circ + y^\circ + z^\circ = 180^\circ \text{ (sum of angles in a triangle } = 180^\circ)$$

$$50^\circ + y^\circ + z^\circ = 180^\circ$$

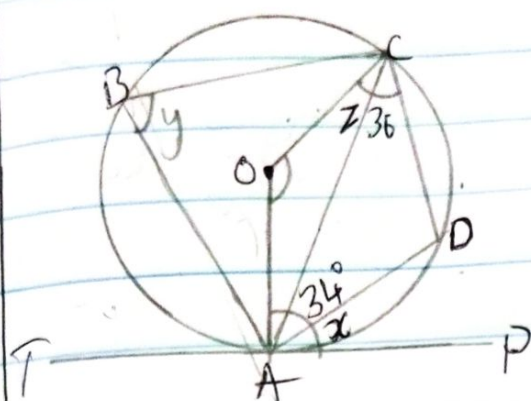
$$y^\circ + z^\circ = 180^\circ - 50^\circ$$

$$y^\circ + z^\circ = 130^\circ$$

$$\therefore y^\circ = \frac{130^\circ}{2} = 65^\circ$$

$$z^\circ = \frac{130^\circ}{2} = 65^\circ$$

(d)



Soln
 $Z = 34^\circ$ (Alternate angle)

Let $\angle AOC = m^\circ$

$m^\circ = 36^\circ$ (Alternate angle)

$$34^\circ + 36^\circ + 2y^\circ = 180^\circ$$

$$70^\circ + 2y^\circ = 180^\circ$$

$$2y^\circ = 180^\circ - 70^\circ$$

$$\frac{2y^\circ}{2} = \frac{110^\circ}{2}$$

$$y^\circ = 55^\circ \text{ (angle at centre = twice of the angle on the circumference)}$$

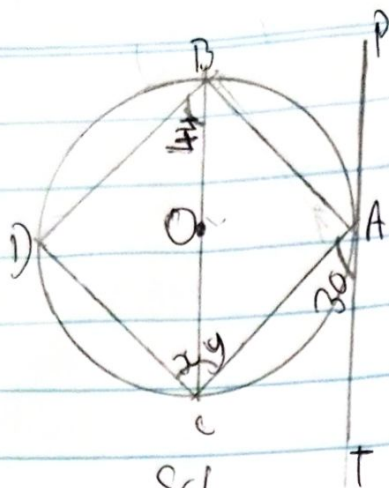
$$\angle C + 34^\circ + 36^\circ = 90^\circ \text{ (angle in a perpendicular line that touches a tangent = } 90^\circ)$$

$$\angle C + 70^\circ = 90^\circ$$

$$\angle C = 90^\circ - 70^\circ$$

$$\angle C = 20^\circ$$

(F)



Soln

$y^\circ = 30^\circ$ (Alternate angles are equal)

Let $\angle BDC = m^\circ$

$m^\circ + 30^\circ + 44^\circ = 180^\circ$ (sum of angles in a triangle $\Sigma 180^\circ$)

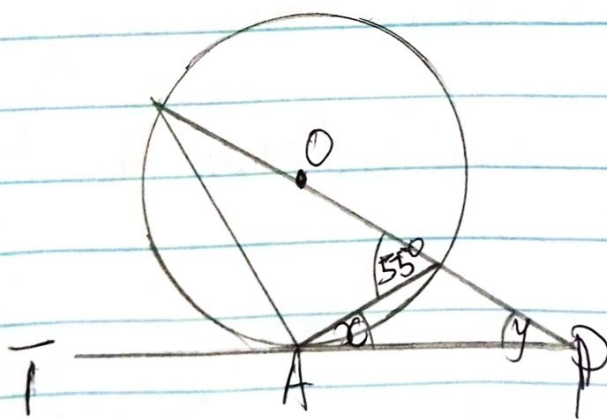
$$m^\circ + 30^\circ = 180^\circ - 44^\circ$$

$$m^\circ + 30^\circ = 136^\circ$$

$$m^\circ = \frac{136^\circ}{2} = \underline{\underline{68^\circ}}$$

$$x^\circ = \frac{136^\circ}{2} = \underline{\underline{68^\circ}}$$

(E)



Soln

$x^\circ = 55^\circ$ (Alternate angles are equal)

$y = x$ (base angles are equal)

$$y = \underline{\underline{55^\circ}}$$