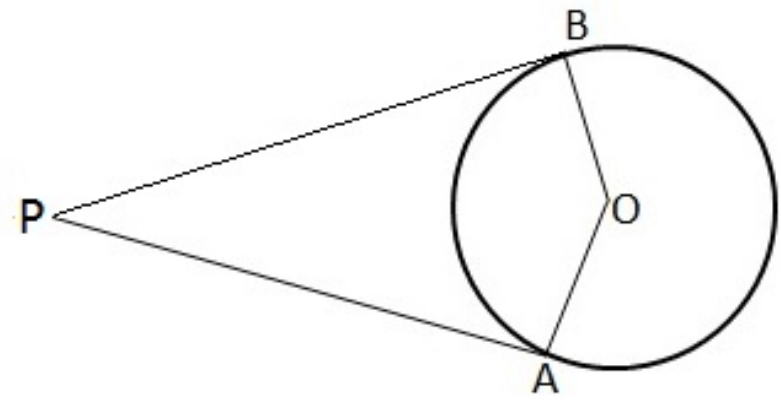
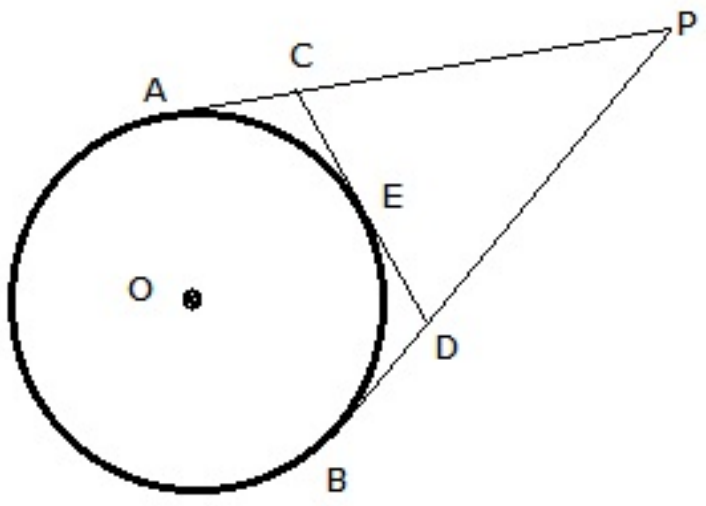
Exercise 12

Question 3:
Given AP is a tangent at A and OA is radius through A and PA and PB are the tangent segments to circle with centre O.
Therefore, OA is perpendicular to AP, similarly, OB is perpendicular to BP.



∴ ∠OAP = 90°
And ∠OBP = 90°
So, ∠OAP = ∠OBP = 90°
∴ ∠OBP + ∠OAP = (90° + 90°) = 180°
Thus, the sum of opposite angles of quad. ΔOBP is 180°
∴ ΔOBP is a cyclic quadrilateral

Question 4:
Given: From an external point P, tangent PA and PB are drawn to a circle with centre O. CD is the tangent to the circle at a point E and PA = 14cm.



Since the tangents from an external point are equal, we have
PA = PB,
Also, CA = CE and DB = DE
Perimeter of Δ PCD = PC + CD + PD
= (PA - CA) + (CE + DE) +(PB - DB)
= (PA - CE) + (CE + DE) + (PB - DE)

= (PA + PB) = 2PA = (2 × 14) cm
= 28 cm
Hence, Perimeter of Δ PCD = 28 cm

********** END **********