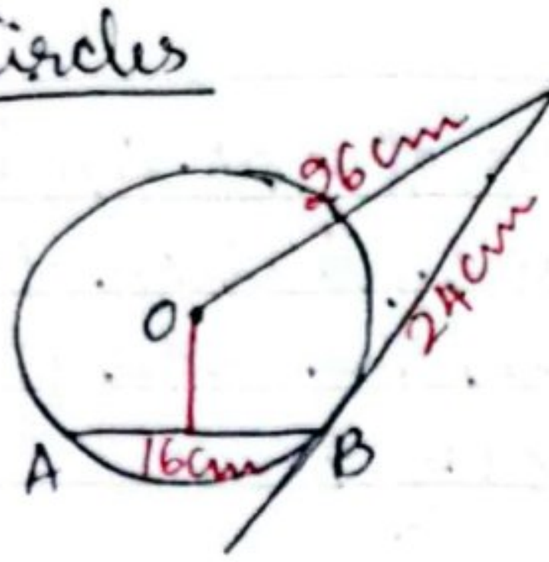
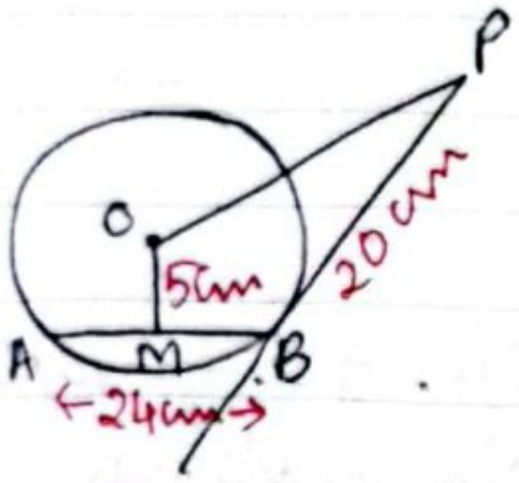
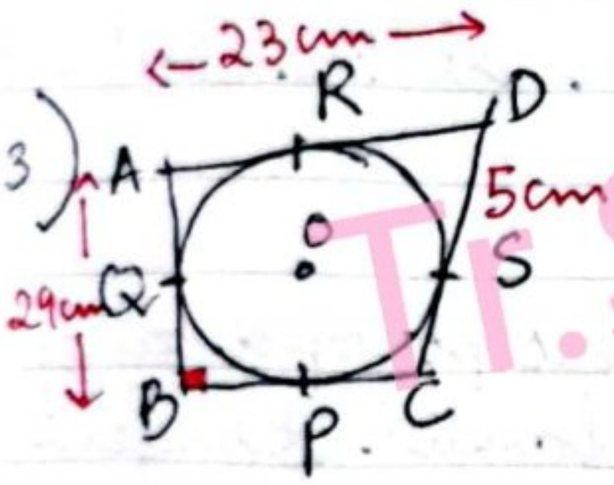
X Circles

1) 

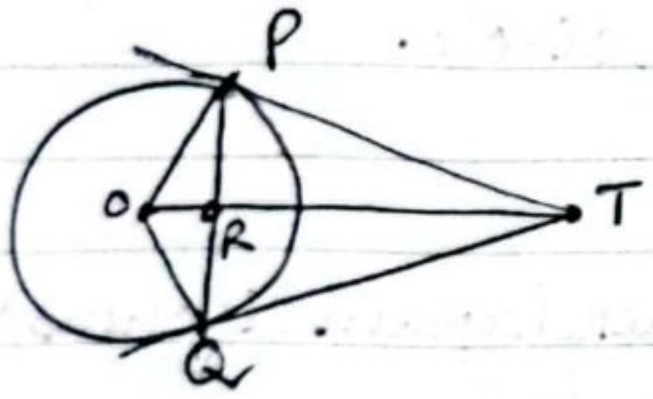
AB is a chord of circle with centre O. At B, a tangent PB is drawn such that its length is 24cm. The distance of P from the centre is 26cm. If the chord AB is 16cm, find its distance from the centre. 6cm

2) 

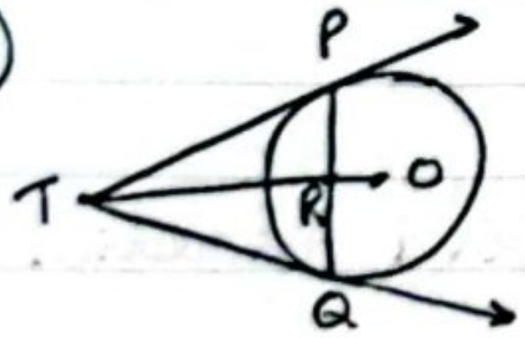
PB is a tangent to the circle with centre O at B. AB is a chord of length 24cm at a distance of 5cm from the centre. If the tangent is of length 20cm, find the length of OP. $\sqrt{569}$ cm

3) 

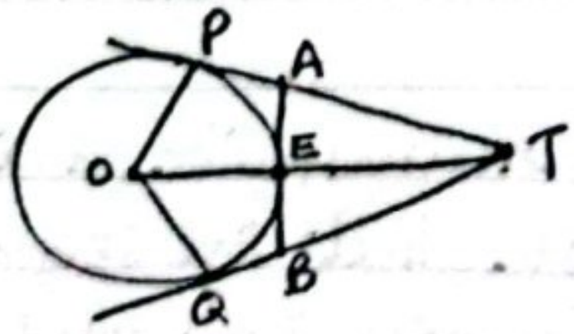
A circle with centre O is inscribed in a quadrilateral ABCD such that AB = 29cm, AD = 23cm, ∠B = 90°, DS = 5cm. Find the radius of the circle. 11cm

4) 

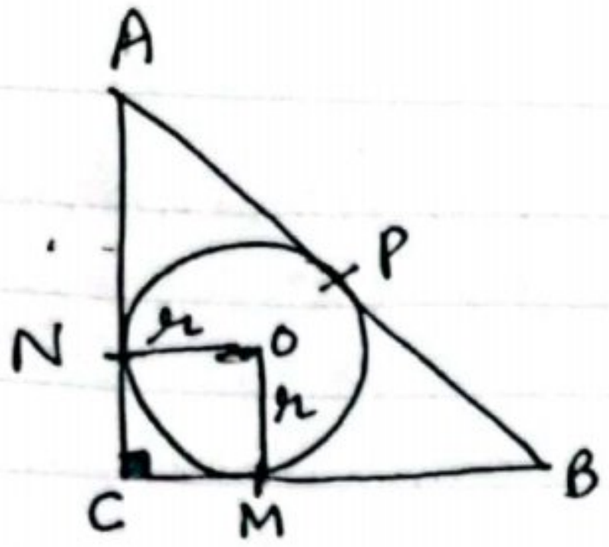
PQ is a chord of length 8cm of a circle of radius 5cm. The tangents drawn at P and Q intersect at T. Find the length of TP. $\frac{20}{3}$ cm

5) 

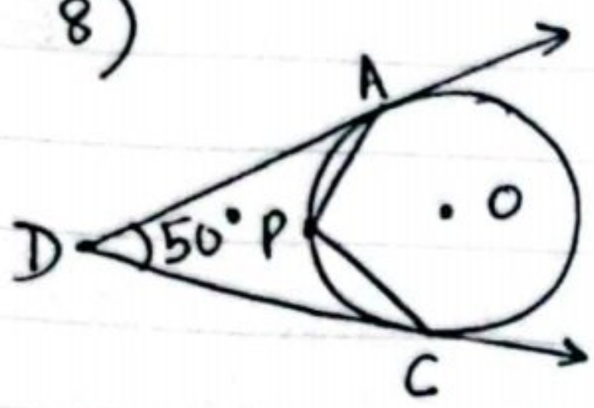
From a point T outside a circle of centre O, tangents TP and TQ are drawn to the circle. Prove that OT is the right bisector of line segment PQ.

6) 

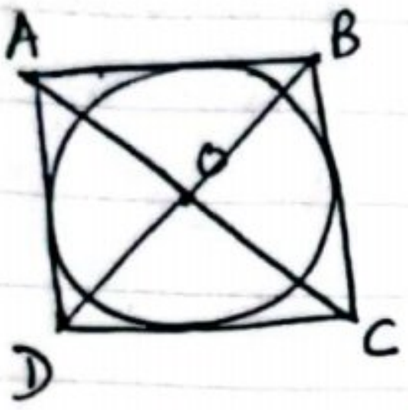
O is the centre of a circle of radius 5cm. T is a point such that OT = 13cm and OT intersects circle at E. Find the length of AB. $\frac{20}{3}$ cm.

7) 

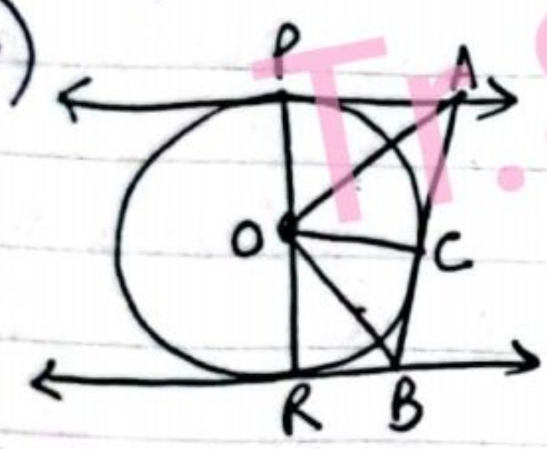
a, b, C are the sides of a rt. Δ, where C is the hypotenuse. A circle of radius r touches the sides of the Δ. Prove that $r = \frac{a+b-C}{2}$

8) 

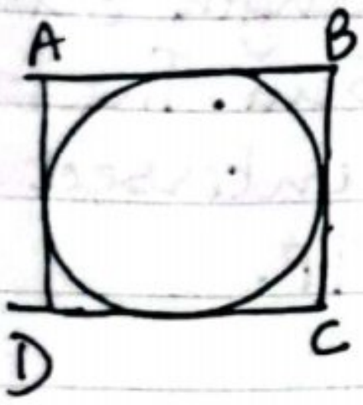
Find ∠APC 115°

9) 

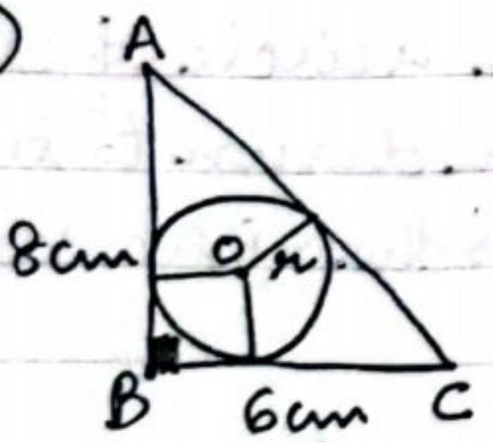
Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.

10) 

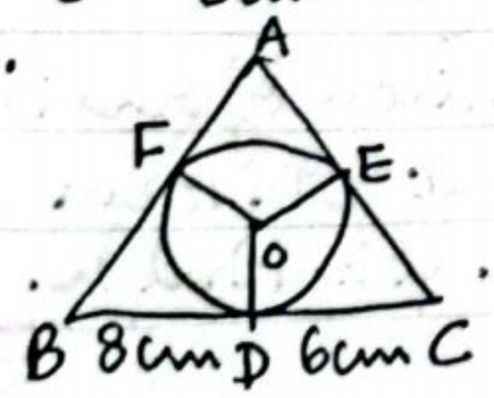
Prove that the intercept of a tangent between a pair of parallel tangents of a circle subtend a right angle at the centre of the circle.

11) 

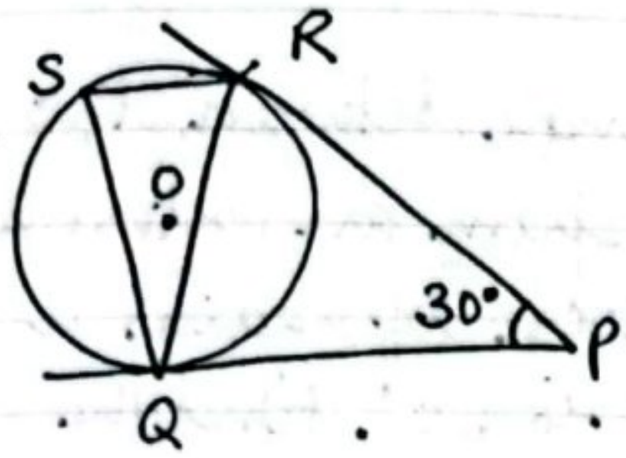
Prove that the parallelogram circumscribing a circle is a rhombus.

12) 

If AB = 8cm, BC = 6cm, find the radius r of the circle. 2cm

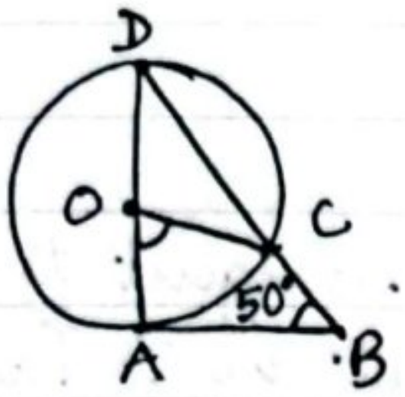
13) 

ΔABC is drawn to circumscribe a circle of radius 4cm such that the segments BD and DC are of lengths 8cm and 6cm respectively. Find AB and AC. 15cm, 13cm

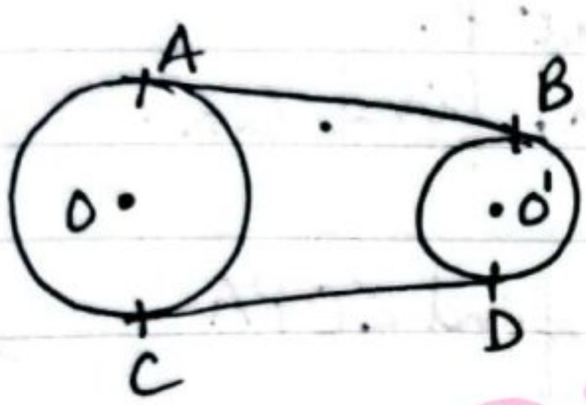
14) 

$\angle RPQ = 30°$, $RS \parallel PQ$. find $\angle RQS$.

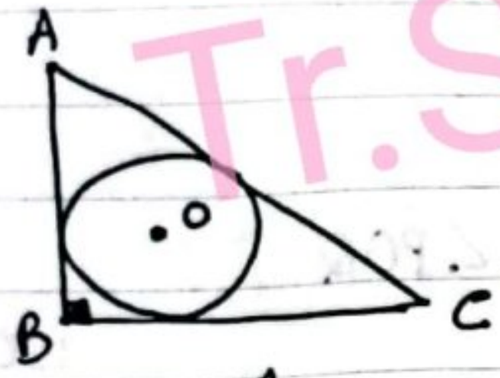
30°

15) 

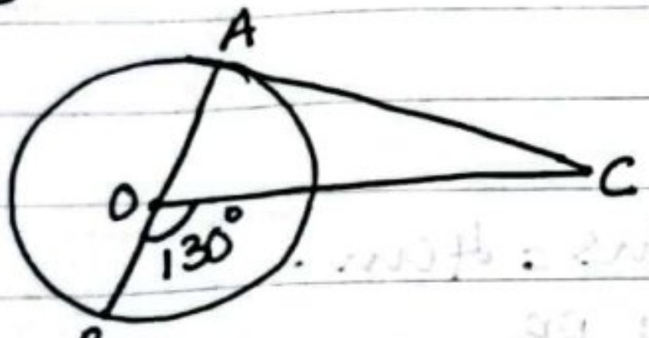
$\angle ABC = 50°$, find $\angle AOC$. 80°

16) 

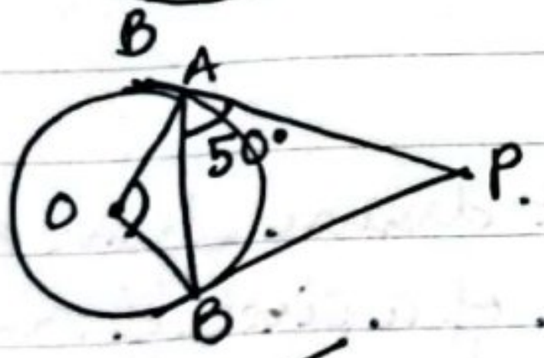
AB and CD are common tangents to two circles of unequal radii. Prove that AB = CD.

17) 

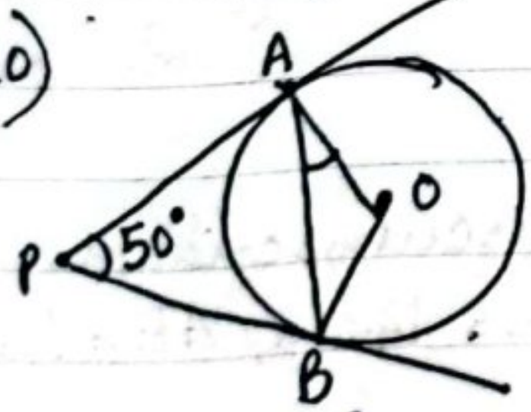
BC = 12cm, AB = 5cm. find redius of the circle inscribed in the Δ. 2cm

18) 

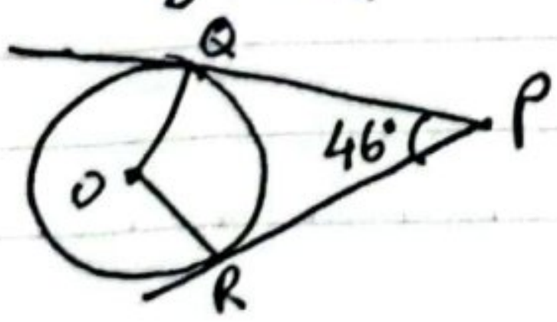
find $\angle ACO$ 40°

19) 

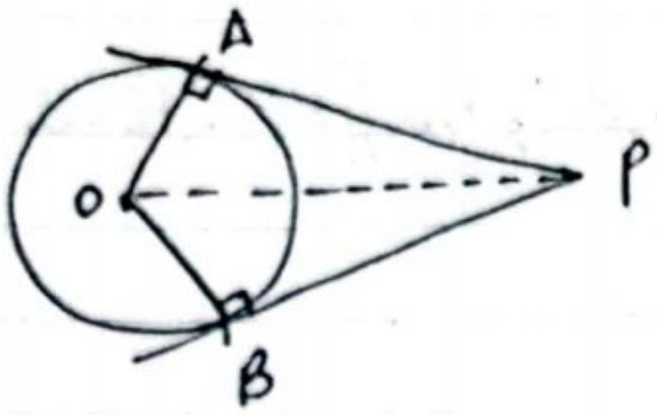
$\angle PAB = 50°$, find $\angle AOB$ 100°

20) 

$\angle APB = 50°$, find $\angle OAB$ 25°

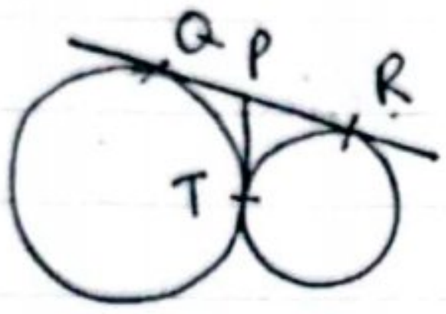
21) 

$\angle QPR = 46°$; find $\angle QOR$ 134°

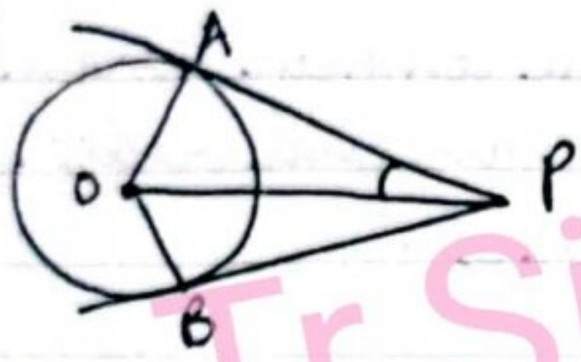
22) 

If the angle between two tangents drawn from an external point P to a circle of radius a and centre O is 60°. Find the length of OP.

2a

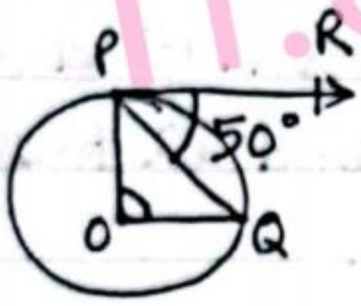
23) 

QR is a common tangent to given circle which meet at T. Tangent at T meets QR at P.
If QP = 3.8cm, find QR.

24) 

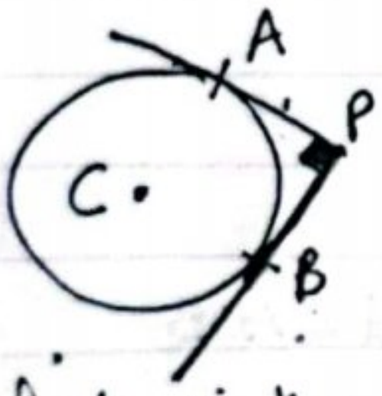
$\angle AOB = 120°$, find $\angle OPA$

30°

25) 

$\angle RPQ = 50°$, find $\angle POQ$

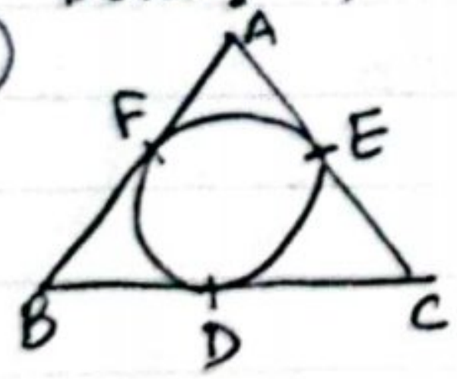
100°

26) 

PA ⊥ PB. radius = 4cm.
Find PA and PB

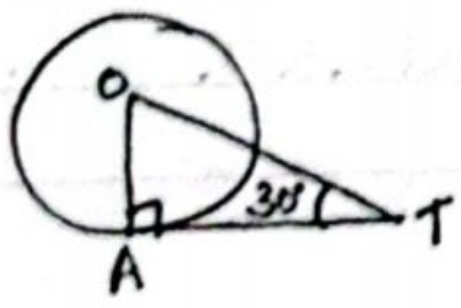
27) What is the length of the tangent drawn from a point 8cm away from the centre of a circle of radius 6cm?

$2\sqrt{7}$ cm

28) 

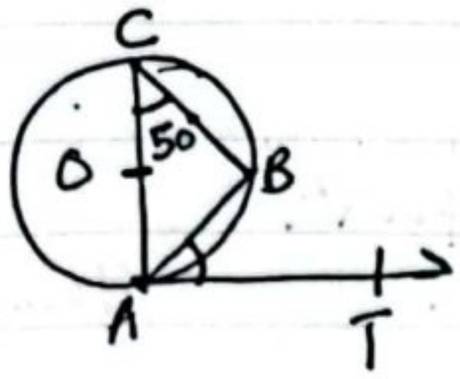
A $\triangle ABC$ is drawn to circumscribe a circle. If AB = 13cm, BC = 14cm, AE = 7cm, find AC.

15cm

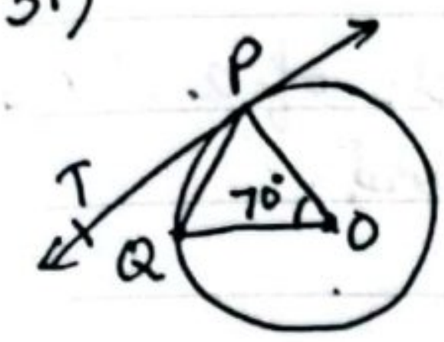
29) 

OT = 4cm, find AT.

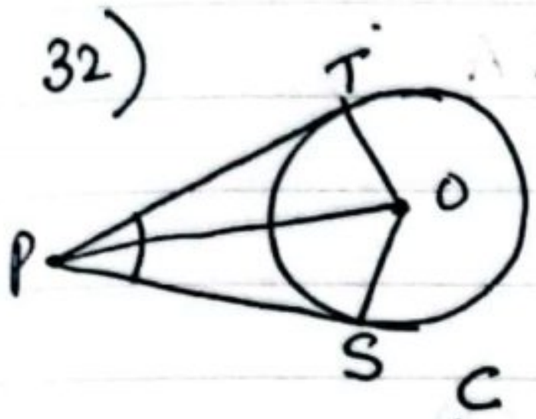
$2\sqrt{3}$ cm

30) 

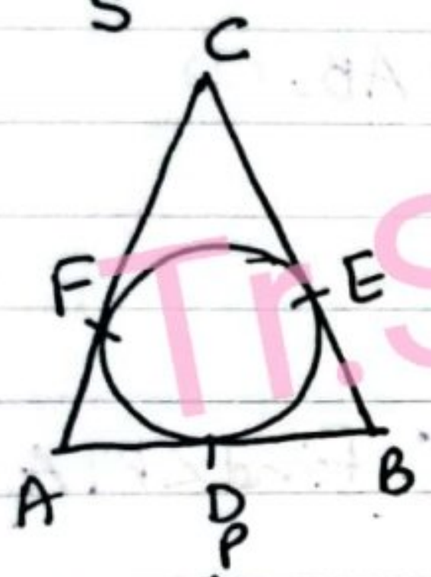
$\angle ACB = 50°$. find $\angle BAT$. 50°

31) 

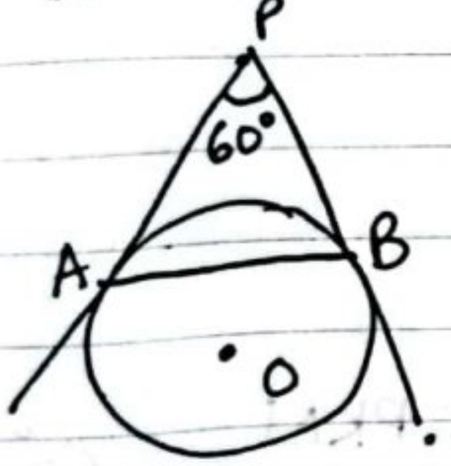
$\angle POQ = 70°$
Find $\angle TPQ$. 35°

32) 

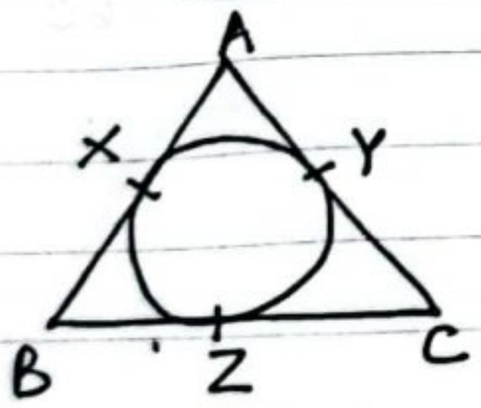
$\angle SPT = 120°$, Prove that $OP = 2PS$

33) 

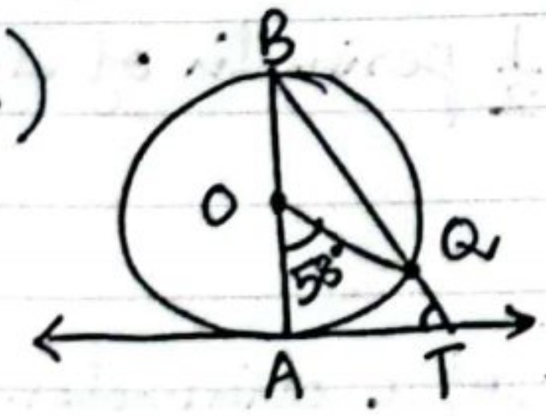
AB = 12cm, BC = 8cm, AC = 10cm.
find AD, BE and CF. 7cm, 5cm, 3cm

34) 

AP = 5cm, $\angle APB = 60°$
find the length of chord AB. 5cm

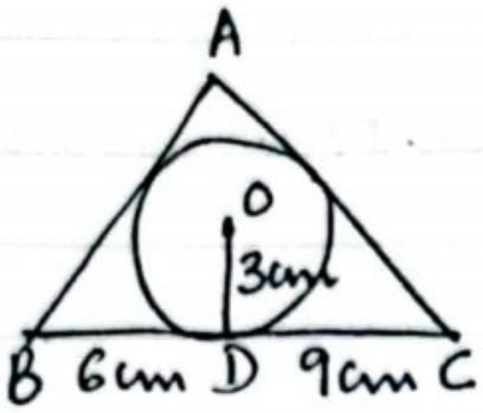
35) 

AB = AC.
Show that BC is bisected at Z.

36) 

$\angle AOQ = 58°$.
find $\angle ATQ$. 61°

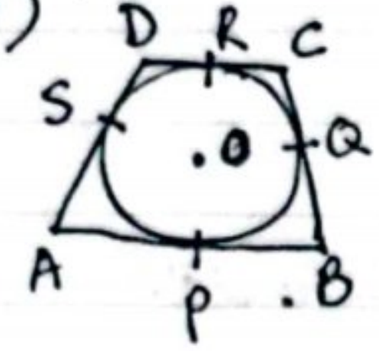
37)



area of $\triangle ABC = 54cm^2$.
Find AB and AC. 9cm, 12cm

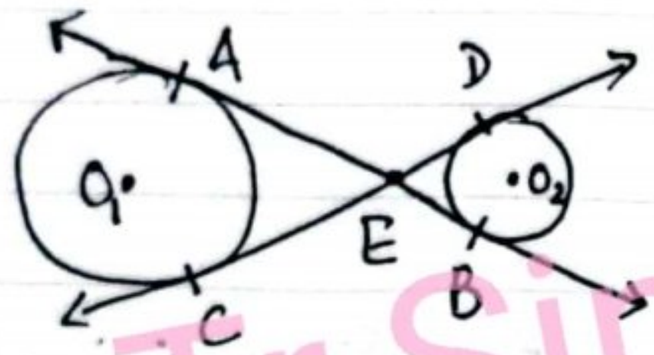
38) Prove that the tangents drawn at the ends of a chord of a circle make equal angles with the chord.

39)



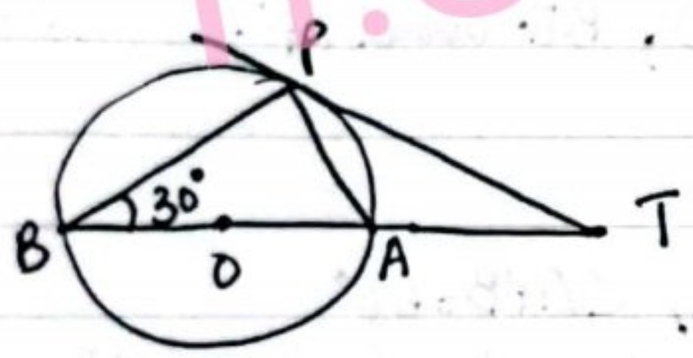
Prove that AB + CD = BC + DA

40)



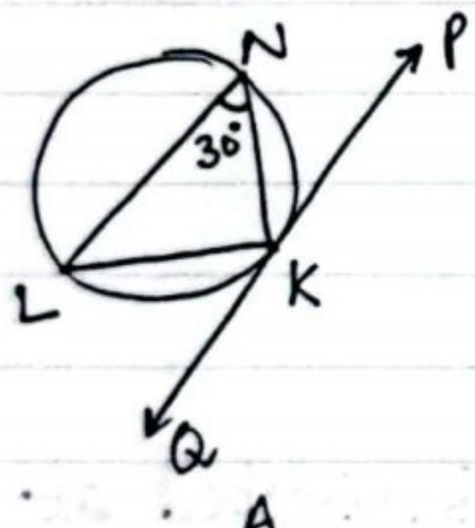
Prove that AB = CD

41)



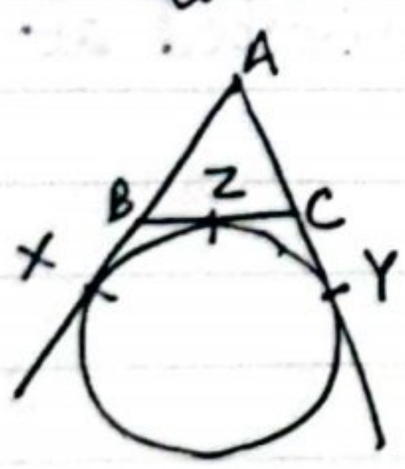
$\angle PBO = 30°$. find $\angle PTA$ 30°

42)



$\angle KNL = 30°$; find $\angle PKN$ 60°

43)



Show that $AX = \frac{1}{2}$ perimeter of $\triangle ABC$

44) P.T tangents drawn at the ends of a diameter of a circle are parallel.

45) Two tangents TP and TQ are drawn to a circle with centre O from an external point T. Prove that $\angle PTO = 2\angle OPQ$.
