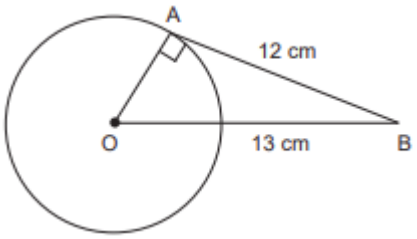
Shashank Academy

ICSE WORKSHEET FOR CHAPTER-15 CONSTRUCTION CLASS 10

Q1. In the given figure find the radius of circle:



Options

(a) 2 cm

(b) 5 cm

(c) 4 cm

(d) 3 cm

Ans. (b) 5 cm

Explanation:

△AOB is a right angle triangle.

∴ by pythagoras theorem

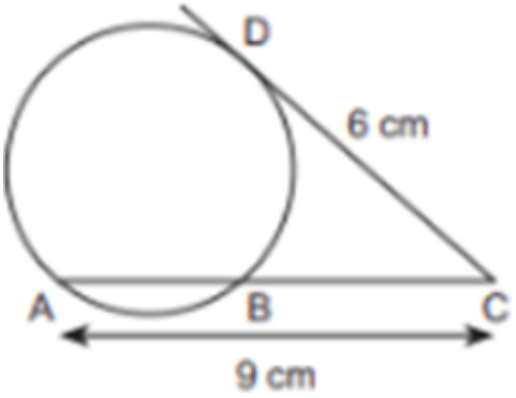
$(OA)^2 = (OB)^2 - (AB)^2$

$OA = (13)^2 - (12)^2$

$OA = 169 - 144 = 25$

$= 5$ cm.

Q2. In the given figure, DC = 6 cm, AC = 9 cm and find AB.



Options

(a) 4 cm

(b) 5 cm

(c) 9 cm

(d) 10 cm

Ans. (b) 5 cm

Explanation:

As we know that

$(DC)^2 = AC \times BC$

$(6)^2 = 9 \times BC$

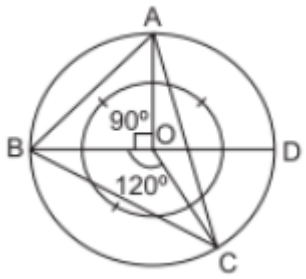
$BC = 369 = 4$ cm.

Now $AB = AC - BC$

$= 9 - 4$

$AB = 5$ cm

Q3. Construct a triangle ABC, given that the radius of the circumcircle of triangle ABC is 3·5 cm, ∠BCA = 45° and ∠BAC = 60°.



Explanation:

Steps of construction :

(i) Draw a circle with radius = 3·5 cm.

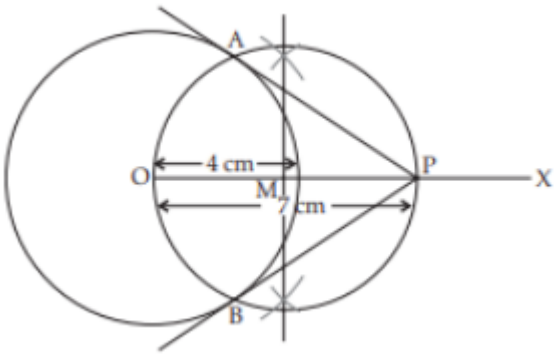
(ii) Draw diameter BOD and construct ∠BOA = 90°.

(iii) Again make ∠BOC = 120°.

(iv) Join AB, AC and BC. Then, ABC is the required triangle

Q4. Use ruler and compass only for answering this question.

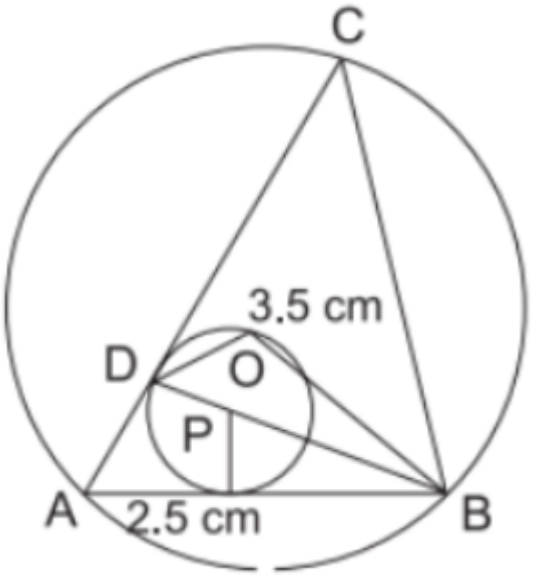
Draw a circle of radius 4 cm. Mark the centre as O. Mark a point P outside the circle at a distance of 7 cm from the centre. Construct two tangents to the circle from the external point P. Measure and write down the length of any one tangent.



Explanation:
Given, radius = 4 cm and OP = 7 cm
Steps of constructions :
(i) Draw a circle of radius 4 cm with centre at O.
(ii) Draw a line OX and cut-off OP = 7 cm.
(iii) Bisect OP at M.
(iv) With M as centre, draw a circle passing through the points O and P to cut the previous circle at A and B.
(v) Join P with A and B. Hence, AP and BP are the required tangents.
∴ The length of tangent, AP = 5.7 cm

Q5. Using ruler and compass only, construct a triangle ABC such that AB = 5 cm, ∠ABC = 75° and the radius of the circumcircle of triangle ABC is 3·5 cm.

On the same diagram, construct a circle, touching AB at its middle point and also touching the side AC.



Explanation:

Steps of construction :

(i) Draw a line segment AB = 5 cm long.

(ii) Make an angle of 75° at 'B' draw perpen -dicular bisector of AB and angular bisector of B.

(iii) Mark 3·5 cm on the perpendicular bisector with O as center and radius equal to OA or OB draw circumcircle.

(iv) Mark 2·5 cm on AC from A.

(v) Join BD, it will intersect at P, with P as centre and PD as radius draw another circle.