X

MATHEMATICS

COMPLETE QUESTION BANK

DISCLAIMER- Please Watch Complete Video before solving this question bank.(Nuksaan tumhara hi hoga varna)

Youtube.com/Shobhit Nirwan

CONSTRUCTIONS

NCERT:

EXERCISE 11.1

4. Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of 60°.

5. Draw a line segment AB of length 8 cm. Taking A as centre, draw a circle of radius 4 cm and taking B as centre, draw another circle of radius 3 cm. Construct tangents to each circle from the centre of the other circle.

6. Let ABC be a right triangle in which AB = 6 cm, BC = 8 cm and angle B = 90°. BD is the perpendicular from B on AC. The circle through B, C, D is drawn. Construct the tangents from A to this circle.

7. Draw a circle with the help of a bangle. Take a point outside the circle. Construct the pair of tangents from this point to the circle.

PREVIOUS YEARS

- ✓ Draw a triangle ABC with BC = 6 cm, AB = 5 cm and angleABC = 60°. Then construct atriangle whose sides are 3/4 of the corresponding sides of the ΔABC. [2018,4]
- ✓ [2017,4]

Construct a triangle ABC with side BC = 7 cm, $\angle$ B = 45°, $\angle$ A = 105°. Then construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of the Δ ABC.

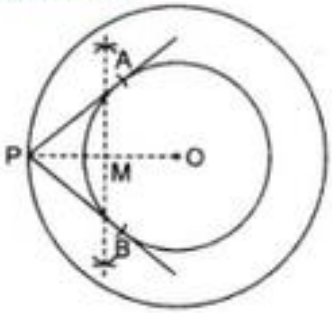
- ✓ Construct a Δ ABC in which AB = 6 cm, ∠A = 30° and ∠B = 60°, Construct another AB'C' similar to ΔABC with base AB' = 8 cm. [2015,4]
- ✓ Construct a triangle with sides 5 cm,4cm and 6cm.Then construct another triangle whose sides are 2/3 times the corresponding sides of the first triangle. [2013,3]
- ✓ Draw a line segment AB of length 7cm.Using ruler and compass, find a point on AB such that AP/AB=3/5. [2011,2]
- ✓ [2010,3]

Construct a triangle ABC in which BC = 8 cm, $\angle$B = 45° and $\angle$C = 30°. Construct another triangle similar to Δ ABC such that its sides are $\frac{3}{4}$ of the corresponding sides of Δ ABC.

SOME OTHER QUESTIONS

Draw two concentric circles of radii 3 cm and 5 cm. Construct a tangent to smaller circle from a point on the larger circle. Also measure its length

Solution:



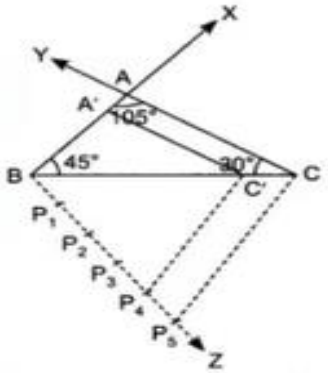
Now after measuring, PA and PB comes out to be 4 cm.
Steps of construction of tangents:

1. Take point O. Draw 2 concentric circles of radii 3 cm and 5 cm respectively.
2. Locate point P on the circumference of larger circle.
3. Join OP and bisect it. Let M be mid-point of OP.
4. Taking M as centre and MP as radius, draw an arc intersecting smaller circle at A and B.
5. Join PA and PB. Thus, PA, PB are required tangents

Most Important type of question

Draw a triangle ABC with BC = 7 cm, ∠B = 45° and ∠A = 105°. Then construct a triangle whose sides are 4/5 times the corresponding sides of ΔABC.

Solution:

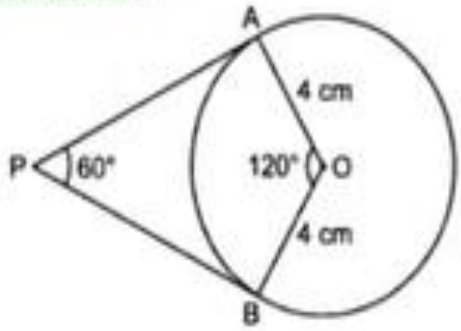


Given, ∠B = 45°, ∠A = 105°
Sum of all interior angles in Δ = 180°
∠A + ∠B + ∠C = 180°
∠C = 30°
Steps of construction:

1. Draw ΔABC with side BC = 7 cm, ∠B = 45°, ∠C = 30°.
2. Draw a ray BX making an acute angle with BC on opposite side of vertex A.
3. Locate 5 points P1, P2, P3, P4, P5 on BZ.
4. Join P5C. Draw line through P4 parallel to P5C intersecting BC at C'.
5. Through C', draw line parallel to AC intersecting AB at A'. ΔA'BC' is the required triangle

Draw a circle of radius 4 cm. Draw two tangents to the circle inclined at an angle of 60° to each other

Solution:

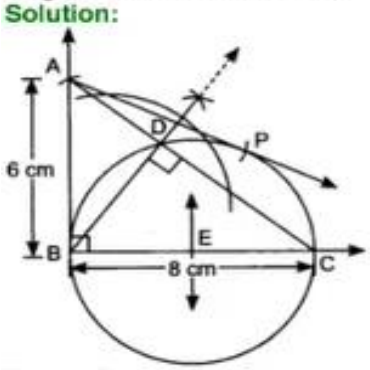


Steps of construction:

1. Draw a circle of radius 4 cm with centre O.
2. Take point A on circle. Join OA.
3- Draw line AP perpendicular to radius OA.
4. Draw ∠AOB = 120° at O.
5. Join A and B at P, to get 2 tangents. Here ∠APB = 60°.

Construct a right triangle ABC with AB = 6 cm, BC = 8 cm and ∠B = 90°. Draw BD, the perpendicular from B on AC. Draw the circle through B, C and D and construct the tangents from A to this circle

Solution:



Thus, AP and AB are the required tangents

Steps of construction:

1. Draw BC = 8 cm, ∠B = 90°.
2. Take an arc of 6 cm, with B as centre, mark an arc on point A. Join AB.
3. Draw BD ⊥ AC. Bisect line BC at E as mid-point of BC.
4. Taking E as centre and EC as its radius, draw circle which will intersect AC at D. Join BD.
5. Mark point P on circle. Join A to P.