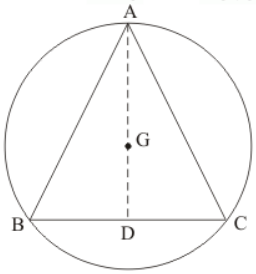
Circles Ex 16.2 Q10

Answer :

Let *ABC* be an equilateral triangle of side 9 cm and let *AD* be one of its medians. Let *G* be the centroid of ΔABC. Then $AG:GD=2:1$



We know that in an equilateral triangle centroid coincides with the circumcentre. Therefore, *G* is the centre of the circumcircle with circumradius *GA*.

As per theorem, *G* is the centre and $GD \perp BC$. Therefore,

$BD=CD$

$=4.5\text{cm}$

In ΔADB we have

$$AD^2 = AB^2 - DB^2$$

$$= 9^2 - (4.5)^2$$

$$= \sqrt{81 - \frac{81}{4}}$$

$$= \frac{9\sqrt{3}}{2} \text{ cm}$$

Therefore radius $AG = \frac{2}{3}AD = 3\sqrt{3}$ cm

Circles Ex 16.2 Q11

Answer :

Let *PQ* be an arc of the circle.

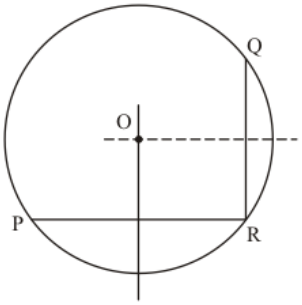
In order to complete the circle. First of all we have to find out its centre and radius.

Now take a point *R* on the arc *PQ* and join *PR* and *QR*.

Draw the perpendicular bisectors of *PR* and *QR* respectively.

Let these perpendicular bisectors intersect at point *O*.

Then *OP* = *OQ*, draw a circle with centre *O* and radius *OP* = *OQ* to get the required circle.



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