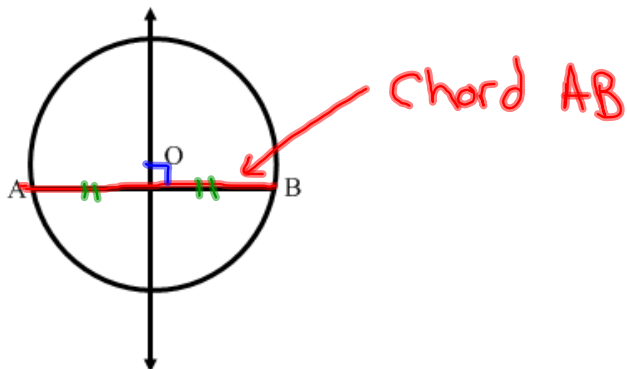


## CHORDS & CIRCLES

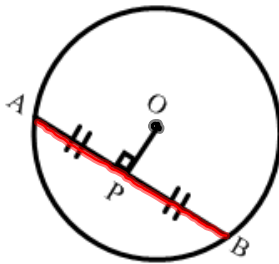
### Chord Property I

The perpendicular bisector of a chord passes through the centre of a circle.



## Chord Property II

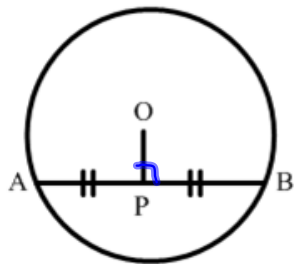
A line drawn perpendicular to a chord from the centre of a circle bisects the chord.



$$AP = PB$$

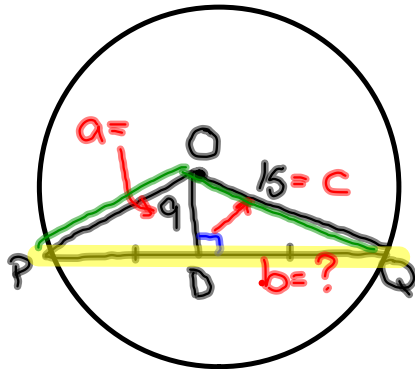
### Chord Property III

The line segment drawn from the centre of a circle to the **midpoint** of the chord is perpendicular to the chord.



$$\angle OPA = \angle OPB = 90^\circ$$

③



How long is PQ?

$$a^2 + b^2 = c^2$$
$$(9)^2 + b^2 = (15)^2$$

$$81 + b^2 = 225$$

$$b^2 = 225 - 81$$

$$\sqrt{b^2} = \sqrt{144}$$

$$b = 12$$

$$PQ = 2 \times 12$$
$$= 24$$