

# Math 9

Name: \_\_\_\_\_

## 9.1 – Chord Properties of Circles

Date: \_\_\_\_\_

**CHORD** : \_\_\_\_\_

**DIAMETER** : \_\_\_\_\_

**BISECTOR** : \_\_\_\_\_

**PERPENDICULAR** : \_\_\_\_\_

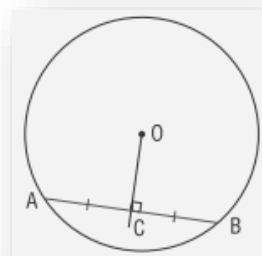
**PERPENDICULAR BISECTOR** : \_\_\_\_\_

### Chord Property 1

If : Line OC is **PERPENDICULAR** to Chord AB

**AND** Line OC passes through the **CENTER**

**THEN** \_\_\_\_\_

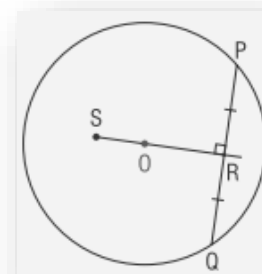


### Chord Property 2

If: Line OC is **PERPENDICULAR** to Chord AB

**AND** Line OC **BISECTS** the Chord AB

**THEN** \_\_\_\_\_

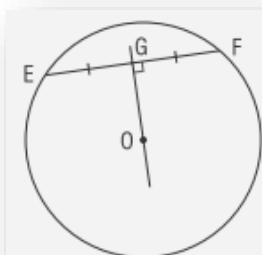


### Chord Property 3

If: Line OC **BISECTS** Chord AB

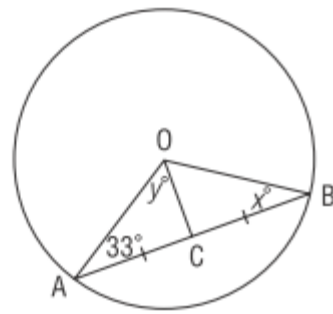
**AND** Line OC passes through the **CENTER**

**THEN** \_\_\_\_\_



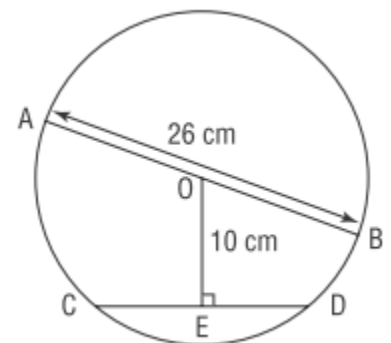
**Ex. 1:**

Point O is the centre of a circle,  
and line segment OC bisects chord AB.  
 $\angle OAC = 33^\circ$   
Determine the values of  $x^\circ$  and  $y^\circ$ .



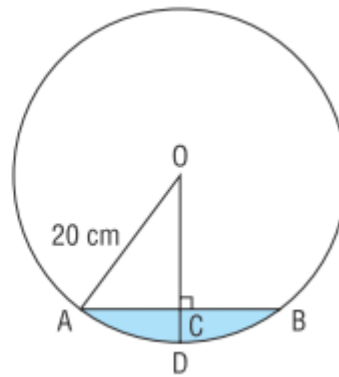
**Ex. 2:**

Point O is the centre of a circle.  
AB is a diameter with length 26 cm.  
CD is a chord that is 10 cm from the centre of the circle.  
What is the length of chord CD?  
Give the answer to the nearest tenth.



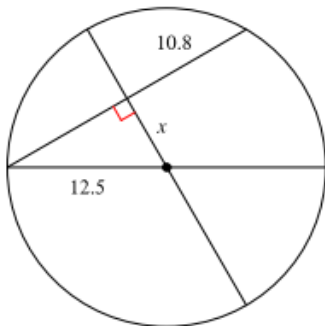
**Ex. 3:**

A horizontal pipe has a circular cross section, with centre  $O$ . Its radius is 20 cm. Water fills less than one-half of the pipe. The surface of the water  $AB$  is 24 cm wide. Determine the maximum depth of the water, which is the depth  $CD$ .



**Ex. 4:** Determine the value of  $x$ , to one decimal place.

a.



b.

