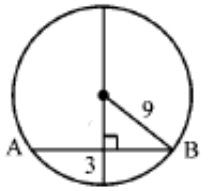
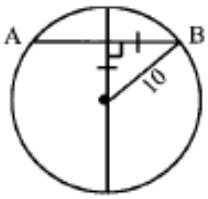
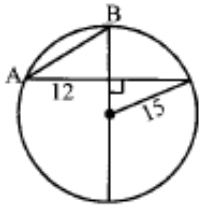
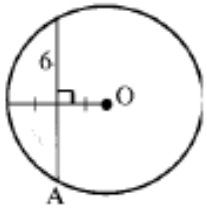
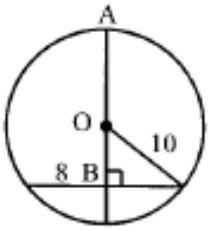
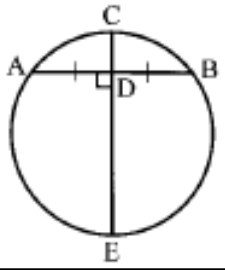
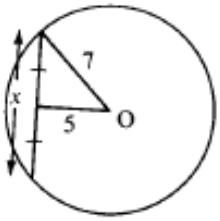
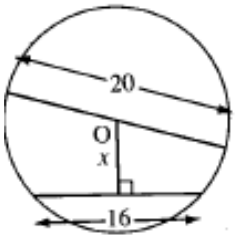
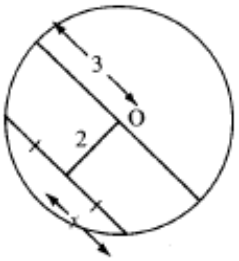
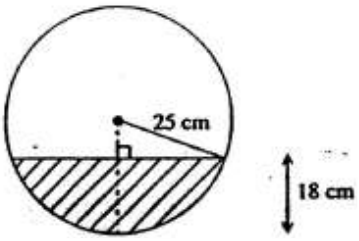
Name:_____ Date:_____

Math Challengers Assignment 15` Circles and Chord Properties

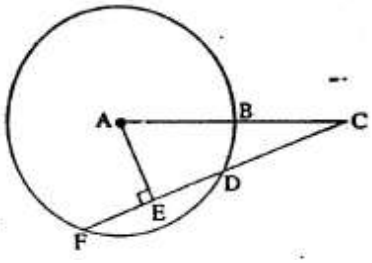
1. Find the length of the missing side "x"

a) $AB =$ 	b) $AB =$ 	c) $AB =$ 
d) $AO =$ 	e) $AB =$ 	f) $CD = 2,\ ED = 8,\ AB =$ 
g) $x =$ 	h) $x =$ 	i) $x =$ 

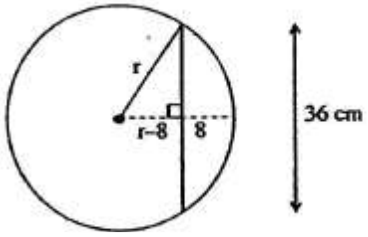
2. The maximum depth of water in a circular pipe of radius 25cm is 18cm. Find the width of the water surface across the pipe.



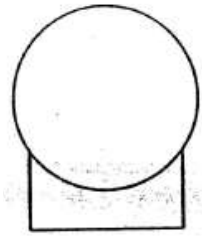
3. If AB =10cm, CF = 21cm, and AE = 8cm. Find the length of CD and AC.



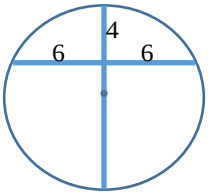
4. A 36cm long cut is made in a circular log 8cm from the edge of the log. What is the diameter of the log?



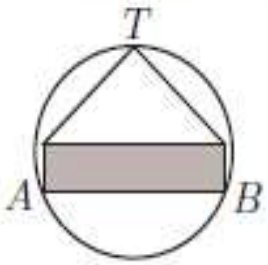
5. A ball with diameter 20cm rests on top of a square box 16cm wide and 9cm deep. How far from the bottom of the box is the bottom of the ball? What diameter ball would just touch the bottom of the box?



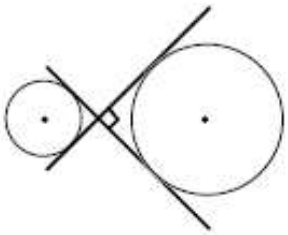
6. What is the length of the radius?



7. The shaded rectangle below has base AB of length 8cm, and has height 2cm. An isosceles triangle is erected with base the side opposite to AB. The triangle is right-angled at T. A circle is drawn passing through A, B, and T. What is the radius of the circle? Express your answer as a common fraction.



8. In the diagram, the tangents to the two circle intersect at $90°$ as shown. If the radius of the smaller circle is 2 and the radius of the larger is 5, what is the distance between the centres of the two circles?



9. A square with area of 1 is inscribed in a circle, which is inscribed in an equilateral triangle. Find the area of the triangle. Express your answer in the form of $\frac{a\sqrt{d}}{b}$.