

Circle Review

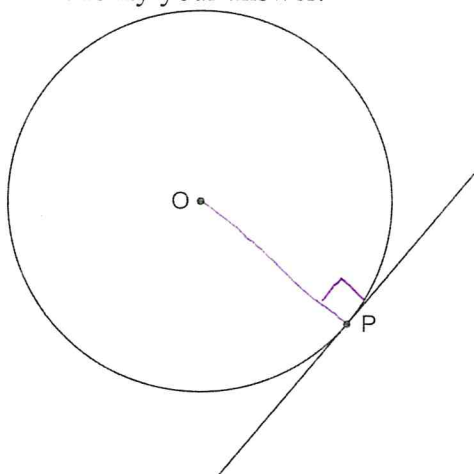
Name _____ Date _____

Master 8.15a

Unit Test: Unit 8 Circle Geometry

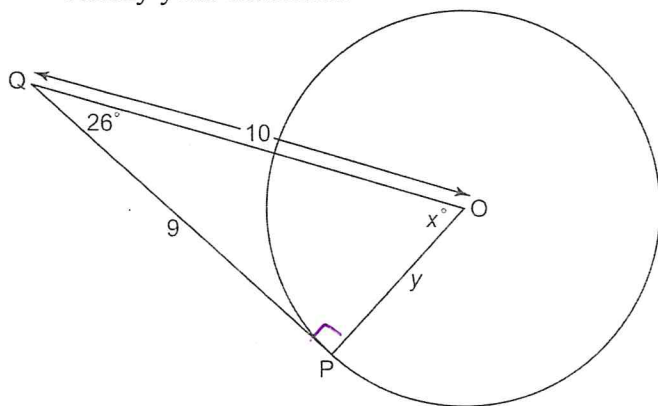
Give your answers to the nearest tenth where necessary.

1. Point O is the centre of the circle.
Is the line through P a tangent to the circle?
Justify your answer.



yes
 90°
 $\rightarrow 1$ pt on circle.

2. Point O is the centre of the circle.
Point P is a point of tangency.
Determine the values of x° and y .
Justify your solutions.



$$180^\circ = 90 + 26 + x^\circ$$

$$180^\circ - 116^\circ = x^\circ$$

$$\boxed{64^\circ = x^\circ}$$

$$y^2 + 9^2 = 10^2$$

$$100 - 81 = y^2$$

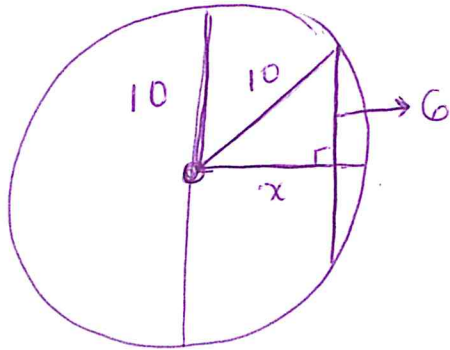
$$\sqrt{19} = y^2$$

$$\boxed{\sqrt{19} = y}$$

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Unit Test continued

3. A circle with radius 10 cm has a chord with length 12 cm.
How far from the centre of the circle is the chord?
Draw a diagram to support your solution.

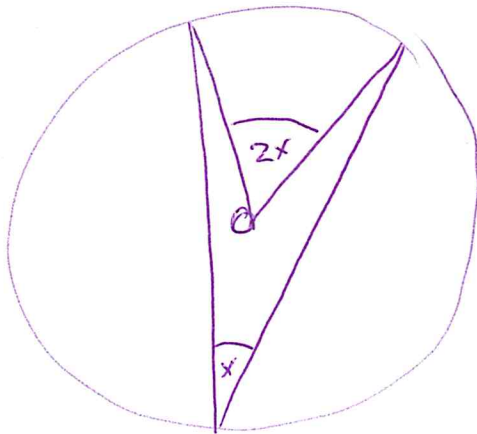


$$10^2 - 6^2 = x^2$$

$$100 - 36 = x^2$$

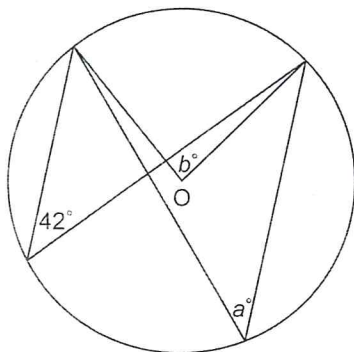
$$\sqrt{64} = x^2$$

4. Draw and label a diagram to illustrate the relationship between the central angle and inscribed angle subtended by the same arc in a circle.
How are inscribed angles subtended by the same arc related?



inscribed $\times 2 =$ central

5. Point O is the centre of the circle.
Determine the values of a° and b° .
Justify your solutions.



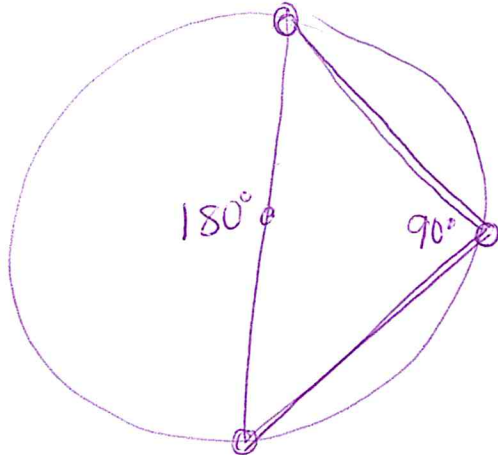
$$a^\circ = 42^\circ$$

$$b^\circ = 84^\circ$$

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Unit Test continued

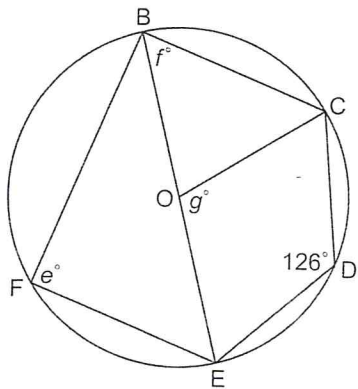
6. The endpoints of the arms of an inscribed angle are the endpoints of a diameter. What is the measure of the inscribed angle? How do you know? Draw a diagram to support your answer.



central = 180°
 so
 inscribed = 90° .

BONUS

7. Point O is the centre of the circle and BE is a diameter. Determine the values of e° , f° , and g° . Justify your solutions.



8. A communications satellite orbits Earth at an altitude of 250 km. Earth's radius is about 6400 km. How far from the satellite is the farthest place on Earth's surface that could receive the satellite's signal? Give the answer to the nearest kilometre.