



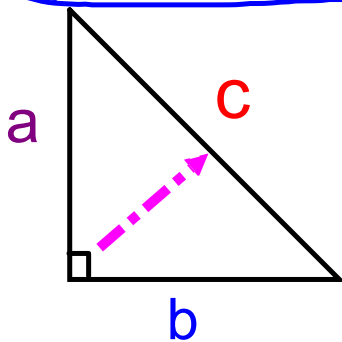
Unit 8



Circle Geometry



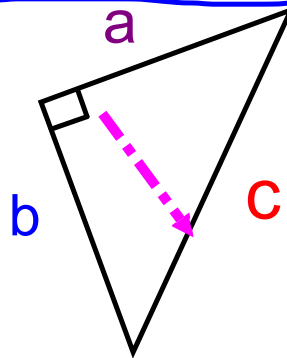
REVIEW



Hypotenuse [**c**]

*the longest side

*opposite the right angle

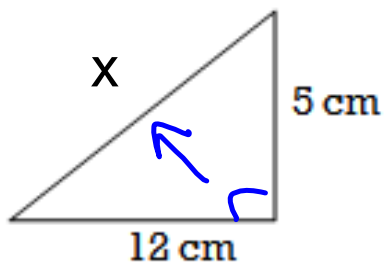


solve for hypotenuse → $c^2 = a^2 + b^2$

solve for a side → $a^2 = c^2 - b^2$ / $b^2 = c^2 - a^2$

Find the measurement of the unknown side.

- Draw an arrow to the hypotenuse.



$$c^2 = a^2 + b^2$$

$$c^2 = 12^2 + 5^2$$

$$c^2 = 144 + 25$$

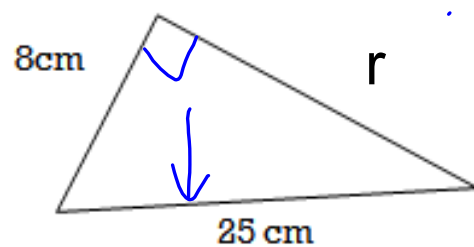
$$\sqrt{c^2} = \sqrt{169}$$

$$c = 13$$

$$c^2 = a^2 + b^2$$

or

$$a^2 = c^2 - b^2$$



$$a^2 = c^2 - b^2$$

$$a^2 = (25)^2 - 8^2$$

$$a^2 = 625 - 64$$

$$\sqrt{a^2} = \sqrt{561}$$

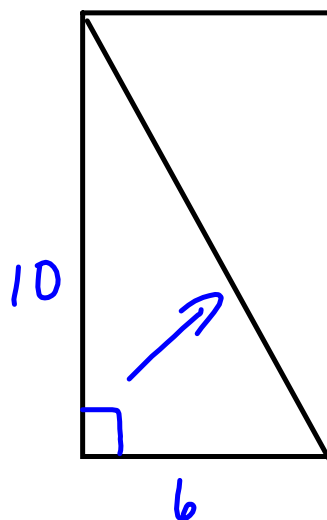
$$a = 23.7$$

A rectangle has base 6 and height 10.

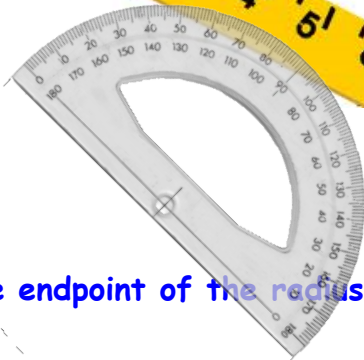
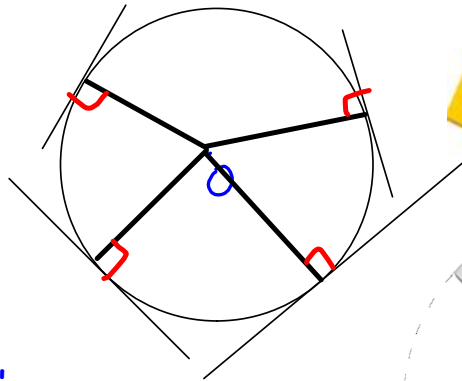
What is the length of the diagonal?

[hypotenuse]

$$\begin{aligned}c^2 &= a^2 + b^2 \\c^2 &= 10^2 + 6^2 \\c^2 &= 100 + 36 \\ \sqrt{c^2} &= \sqrt{136} \\ c &= 11.7\end{aligned}$$



Diameter = 8.8 cm
 $\downarrow \div 2$
 Radius = 4.4 cm

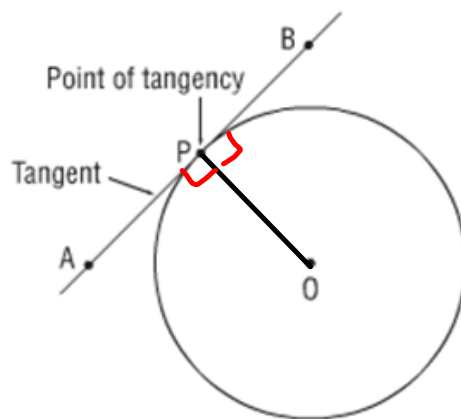


1. Label the center "O"
2. Draw a radius that touches the circle only at the endpoint of the radius.
3. Draw a line to touch the radius and passes on the outside of the circle
4. Repeat steps 2-3 THREE times
5. Measure the angle between the radius and the line.



Tangent To A Circle

- * A line that intersects a circle at only **ONE POINT** is a **tangent** to the circle
- * The point where the tangent intersects the circle is the **point of tangency**.
- * Line AB is a TANGENT to the circle with center O
Point P is the point of tangency



Name a
line using
Two letters!!!

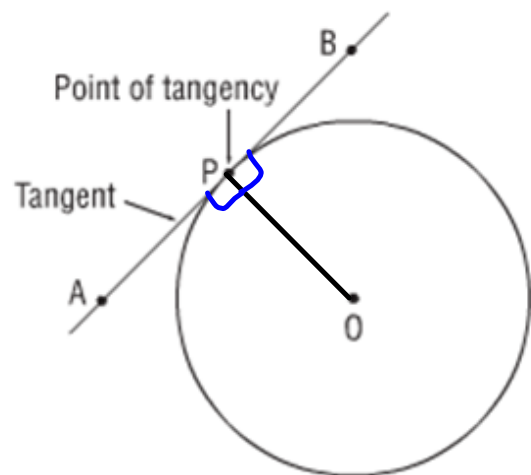
Name the radius:
 PO, OP

Tangent-Radius Property

* A tangent to a circle is perpendicular to the radius at the point of tangency. [90°]

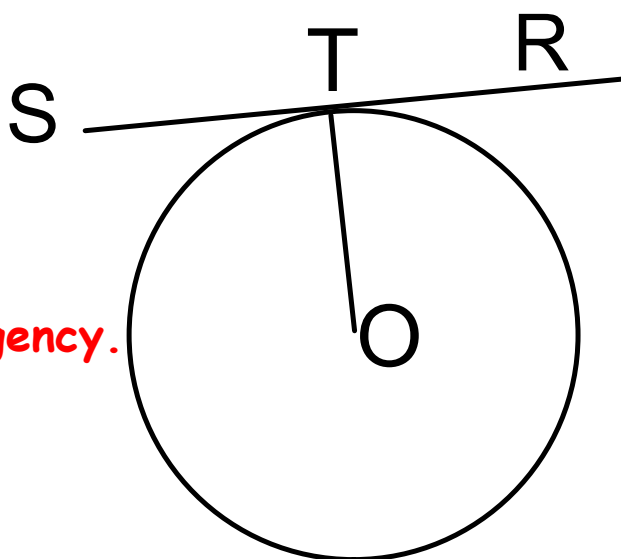
↙ angle
 $\angle \underline{A}PO = \angle \underline{B}PO = 90^\circ$

*** use three letters when naming an angle!**



Name a line with two letters!

Name an angle with three letters!



1. Identify the radius.

OT, TO

2. Identify the point of tangency.

T

3. Name the tangent

SR, RS

4. What is the relationship between the tangent and the radius? They form a 90° angle.

5. Name the 90° angle $\angle \underline{S}T\underline{O}$, $\angle \underline{R}T\underline{O}$, $\angle \underline{O}T\underline{S}$, $\angle \underline{O}T\underline{R}$