



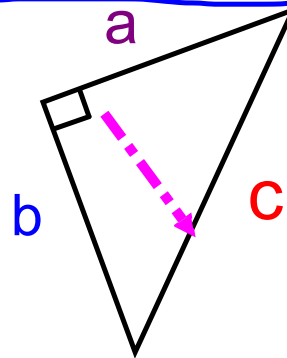
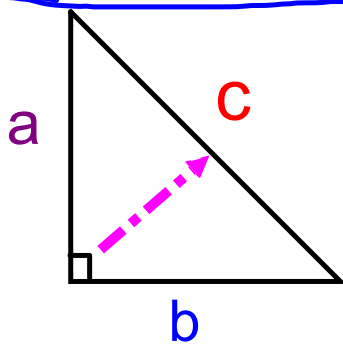
## Unit 8



# Circle Geometry



REVIEW



Hypotenuse [**c**]

- \*the longest side
- \*opposite the right angle

solve for hypotenuse

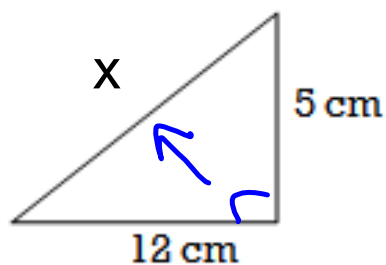
$$c^2 = a^2 + b^2$$

solve for a side

$$a^2 = c^2 - b^2 \quad / \quad b^2 = c^2 - a^2$$

Find the measurement of the unknown side.

- Draw an arrow to the hypotenuse.



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

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

$$c^2 = 144 + 25$$

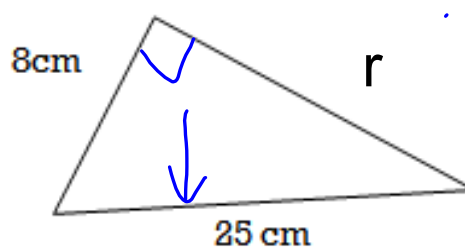
$$\sqrt{c^2} = \sqrt{169}$$

$$c = 13$$

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

or

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



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

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

$$a^2 = 625 - 64$$

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

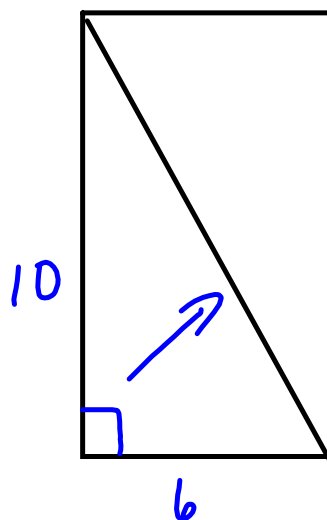
$$a = 23.7$$

A rectangle has base 6 and height 10.

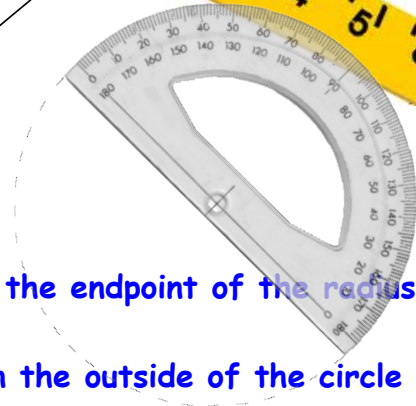
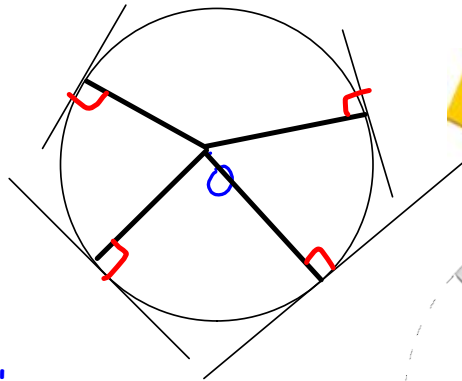
What is the length of the diagonal?

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



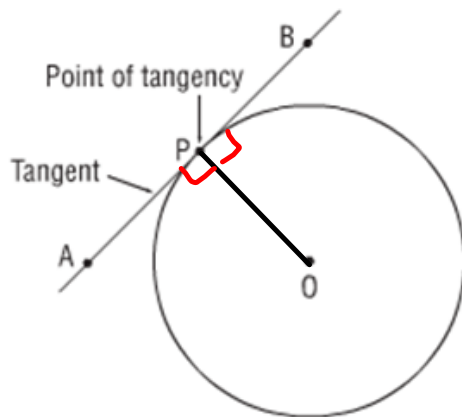
1. Label the center "O"
2. Draw a radius that touches the circle only at the endpoint of the radius.
3. Draw a line to touch the radius and passes on the outside of the circle
4. Repeat steps 2-3 THREE times
5. Measure the angle between the radius and the line.



## Tangent To A Circle

*(meets)*

- \* 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!!!

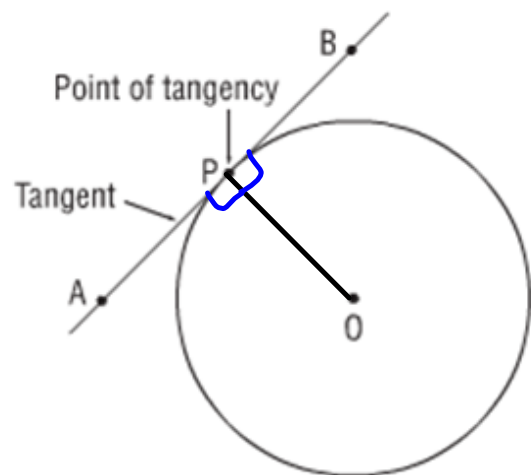
Name the radius:  
*PO, OP*

## Tangent-Radius Property

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

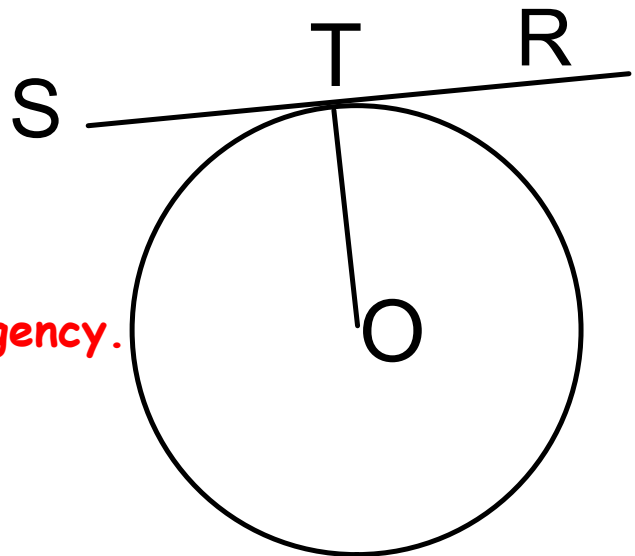
↙ angle  
 $\angle \underline{A}PO = \angle \underline{B}PO = 90^\circ$

\* 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  $90^\circ$  angle.

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



In triangle OAB,  $\angle AOB = 63^\circ$

Remember:

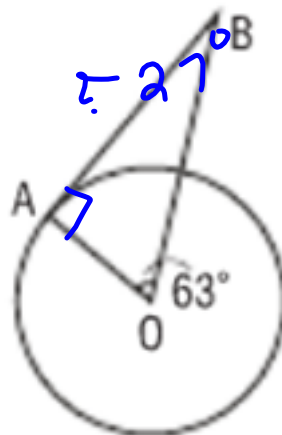
sum angles  
of triangle  
is  $180^\circ!!!$

1) Find the measure of  $\angle OBA$

2) Tangent: AB

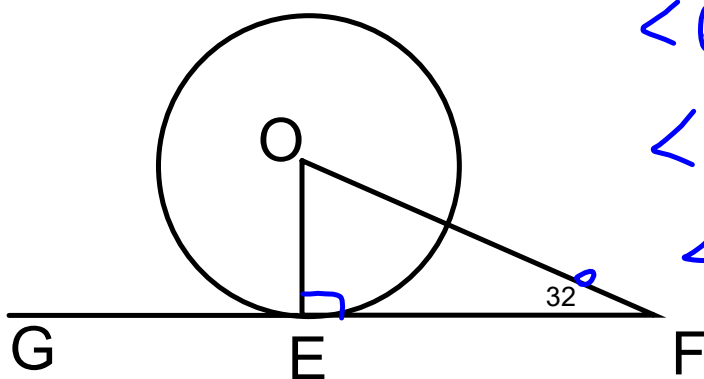
3) List the three angles:  
[Name]

$\angle OBA$   
 $\angle AOB$   
 $\angle BAO$



Name the radius:

Name and identify all angles in Triangle EOF



List the angles: measurement

$\angle EOF$

$58^\circ$

$\angle FEO$

$90^\circ$

$\angle OFE$

$32^\circ$

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$180^\circ$

