

Bellwork

03/07/2012

The diagram shows the pieces of a puzzle.

1. Which pieces are translated?

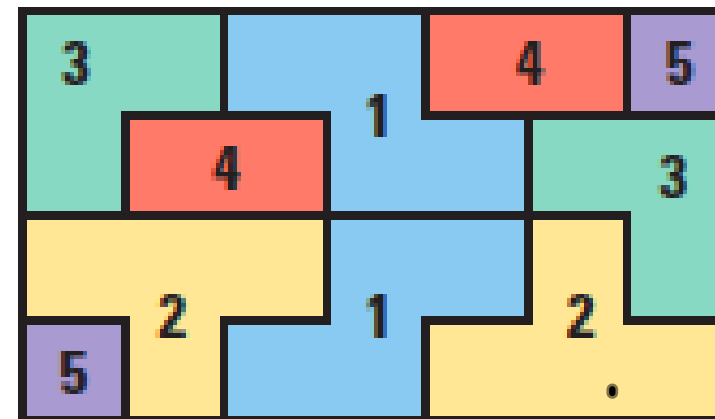
4 & 5

2. Which pieces are reflected?

1

3. Which pieces are glide reflected?

2 & 3

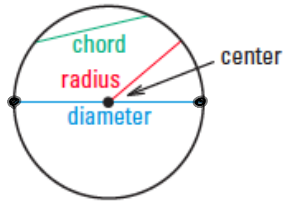


Geometry
10.1 Use Properties of Tangents
 Standard(s): 3, 4

Vocabulary:

Circle: The set of all points in a plane that are equidistant from a fixed point.

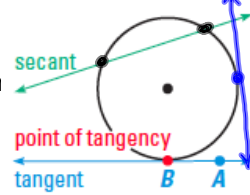
Center: The fixed point
A circle with center



Radius: A segment from the center and any point on the circle.

Chord: A segment whose endpoints are on the circle.

Diameter: A chord of the circle.

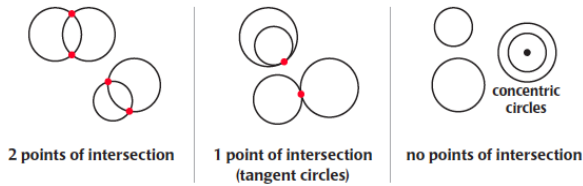


Tangent: A line in the plane of a circle that intersects the circle at exactly one point (a.k.a. point of tangency).

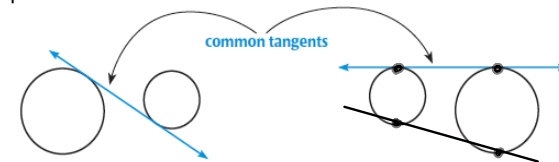
Secant: A line that intersects the circle at two points.

Concentric Circles: Circles with no points of intersection.

Tangent Circles: Circles with one point of intersection.



Common Tangents: A line, ray, or segment that is tangent to two coplanar circles.

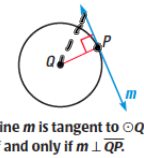


THEOREM *For Your Notebook*

THEOREM 10.1

In a plane, a line is tangent to a circle if and only if the line is perpendicular to a radius of the circle at its endpoint on the circle.

Proof: Exs. 39–40, p. 658



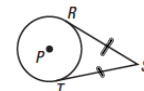
Line m is tangent to $\odot Q$ if and only if $m \perp \overline{QP}$.

THEOREM *For Your Notebook*

THEOREM 10.2

Tangent segments from a common external point are congruent.

Proof: Ex. 41, p. 658



If \overline{SR} and \overline{ST} are tangent segments, then $\overline{SR} = \overline{ST}$.

Draw Special Segments

Use $\odot P$ to draw the part of the circle described or answer the question.

Draw a diameter AB.

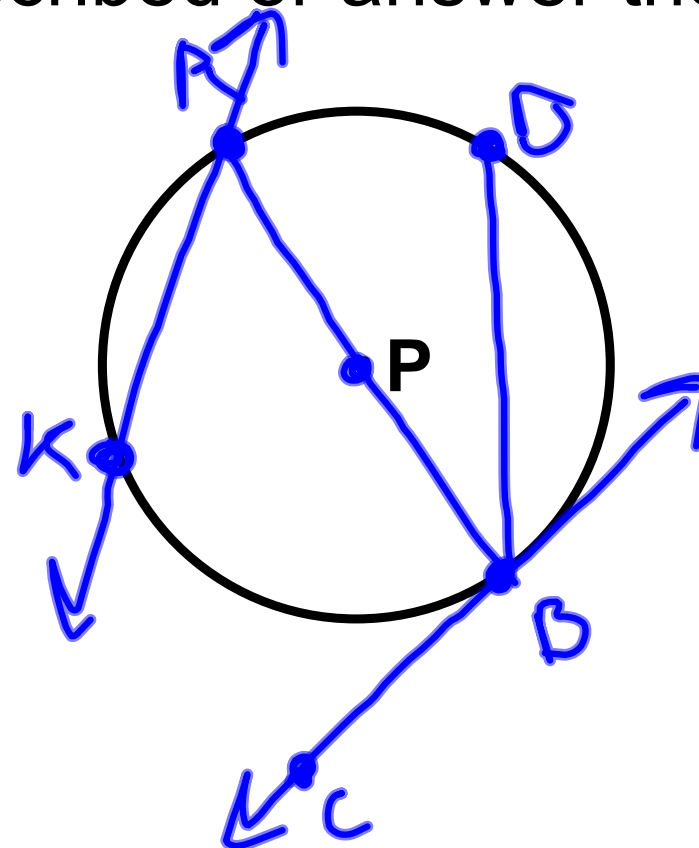
Draw a tangent line CB.

Draw chord DB.

Draw a secant through point A.

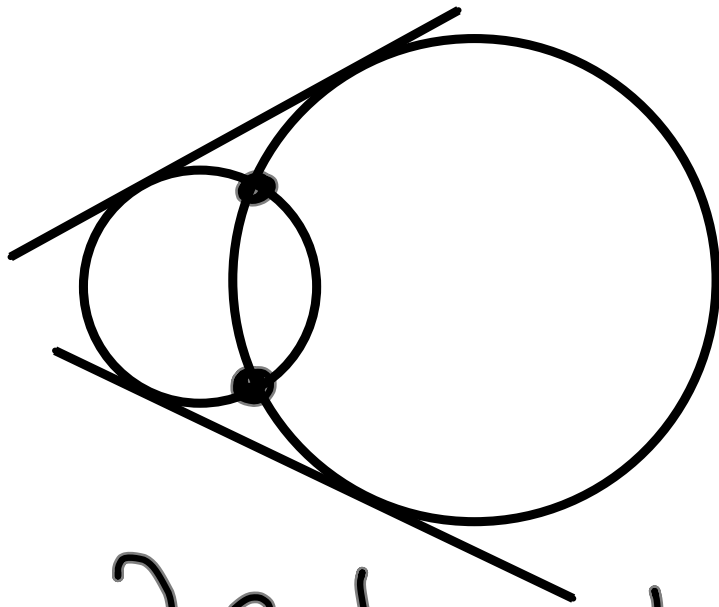
What is the name of the radius?

\overline{AP} \overline{BP}
 \overline{PA} \overline{PB}

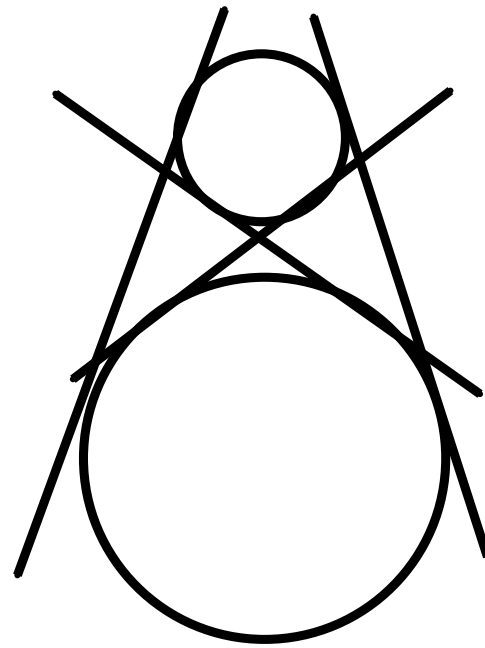


Draw Common Tangents

Tell how many common tangents the circles have and draw them. What type of circles are they?

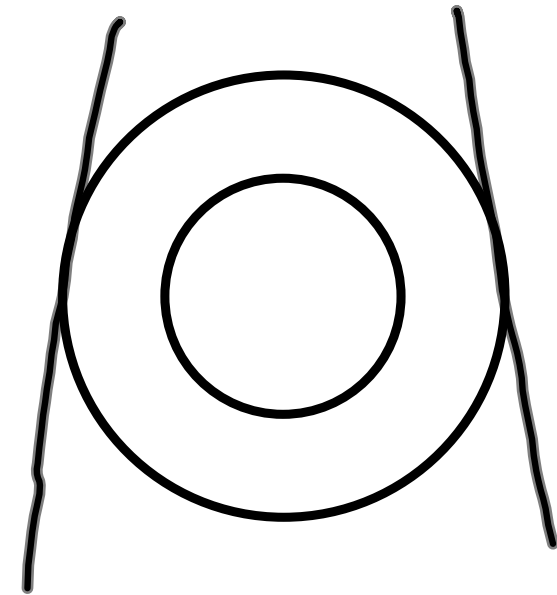


2 external



concentric

2 external
2 internal

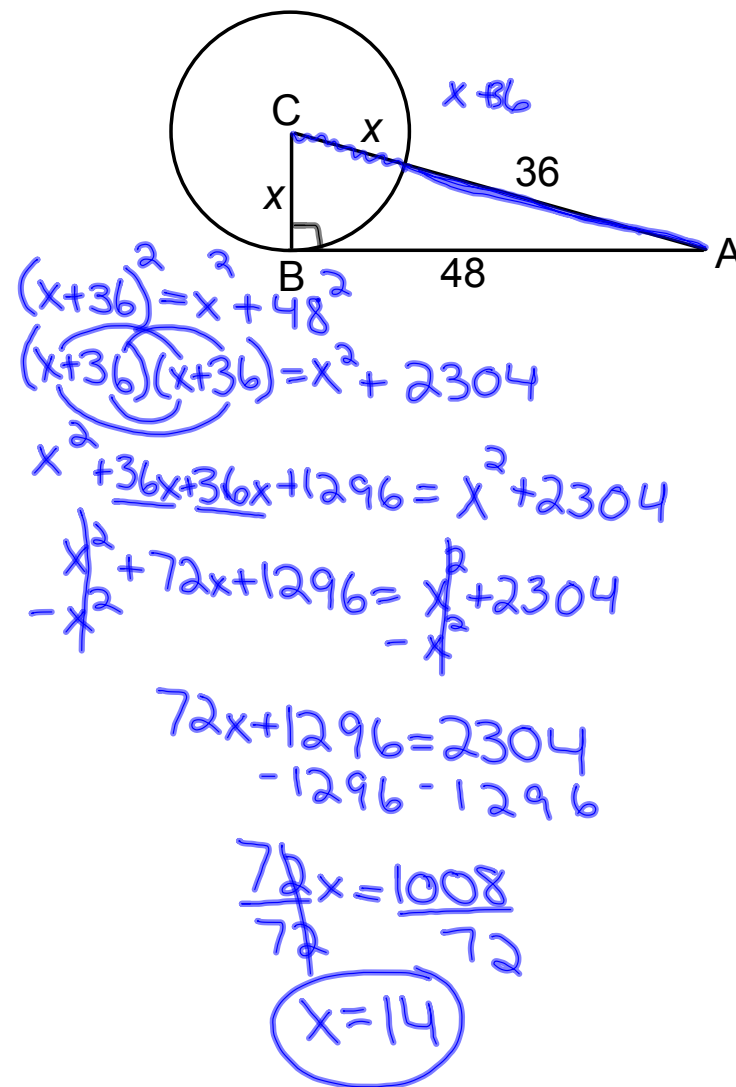
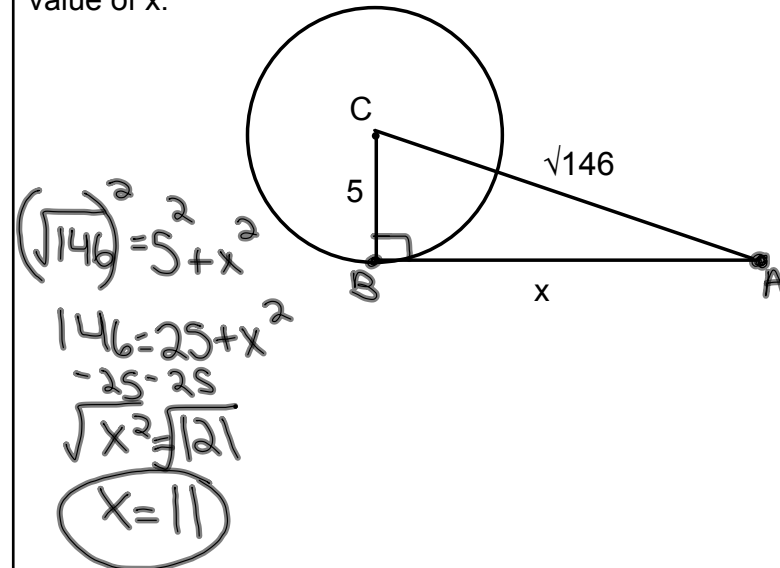


concentric

0

Use the Radius

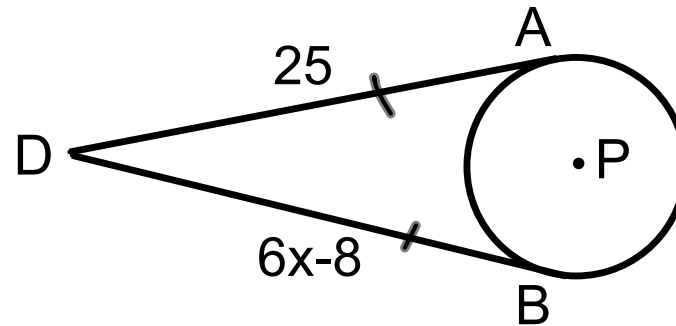
BC is a radius of circle C and AB is tangent to circle C. Find the value of x.



Use Properties of Tangents

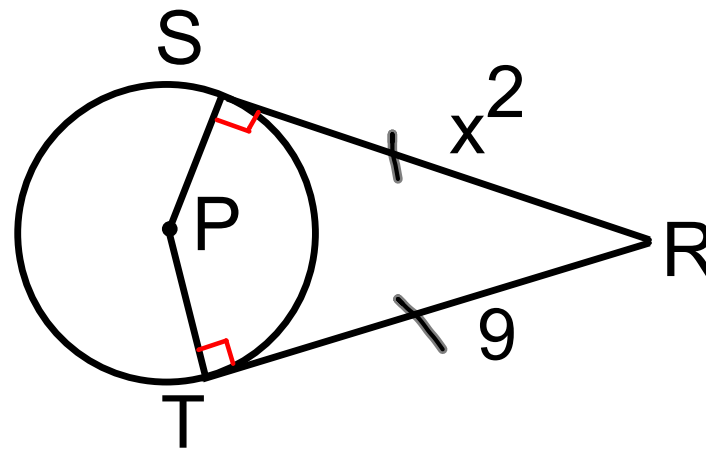
In circle C , DA is tangent at A and DB is tangent at B . Find x .

$$\begin{aligned} 6x - 8 &= 25 \\ +8 &+ 8 \\ \hline 6x &= 33 \\ \frac{6x}{6} &= \frac{33}{6} \\ x &= 5.5 \end{aligned}$$



In circle C , RS is tangent at S and RT is tangent at T . Find x .

$$\begin{aligned} \sqrt{x^2} &= \sqrt{9} \\ x &= 3 \end{aligned}$$



Homework Assignment

Worksheet 10.1B

