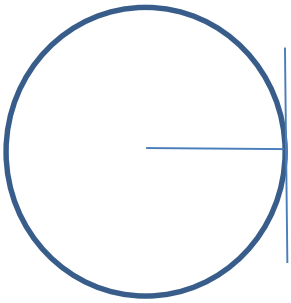
Unit Circles **Name:** _____

Day #3 **Period: 1 2 3 4 5 6 7 8**

G-C.2 Rules of Tangents: Angles

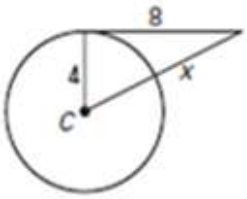


Tangent Line: Intersects the circle at one point

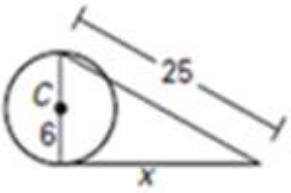
A Tangent line to a circle is _____ to the radius at the point of tangency.

For each circle C find the value of x. Assume that segments that appear to be tangent are tangent. Leave answers as decimal approximations rounded to the nearest tenth.

1.

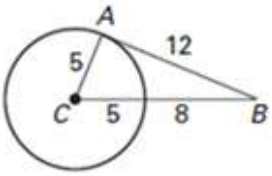


2.

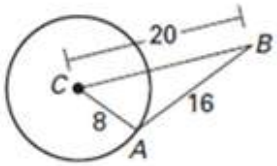


Tell whether $\overleftrightarrow{AB}$ is tangent to $\odot C$. Explain your reasoning.

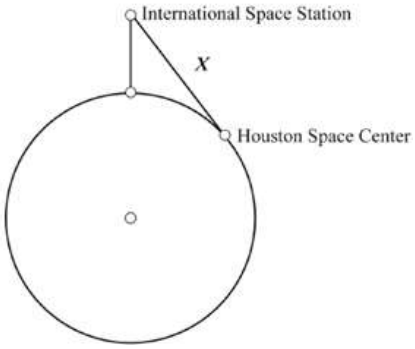
3.



4.



5. The average height of the International Space Station is 400 km above the Earth. An astronaut on board the International Space Station sights along a tangent line to Earth, viewing Houston Space Center. If the diameter of the Earth is approximately 12, 800 km, how far is the astronaut from the Space Center? Show your calculations; then, explain, in paragraph form, how you found the answer.



Calculations:

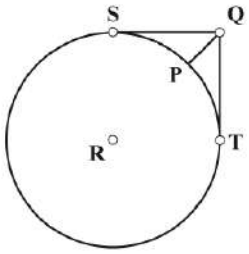
_____

_____

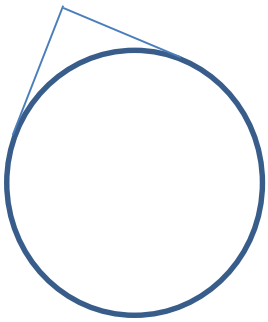
_____

_____

6. A conveyor belt is tightly wrapped around circle R, forming a right angle at Q. The circle has a radius of 9 inches. Find the length of the distance from the point on the corner to the closest point on the circle, P. Show all work.



Concept 2:

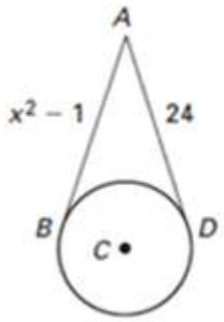


Shown are two tangent segments that are intersecting.

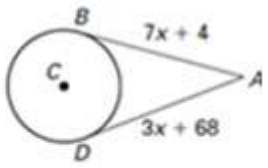
Tangent Segments to a circle from a point outside the circle are _____

In Exercises 1-2, $\overleftrightarrow{AB}$ and $\overleftrightarrow{AD}$ are tangent to circle C. Find the value of x.

1.



2.



4. A nickel, a dime, and a quarter are touching, as shown. Tangents are drawn from point A to both sides of each coin. What can you conclude about the four tangent segments? Explain.