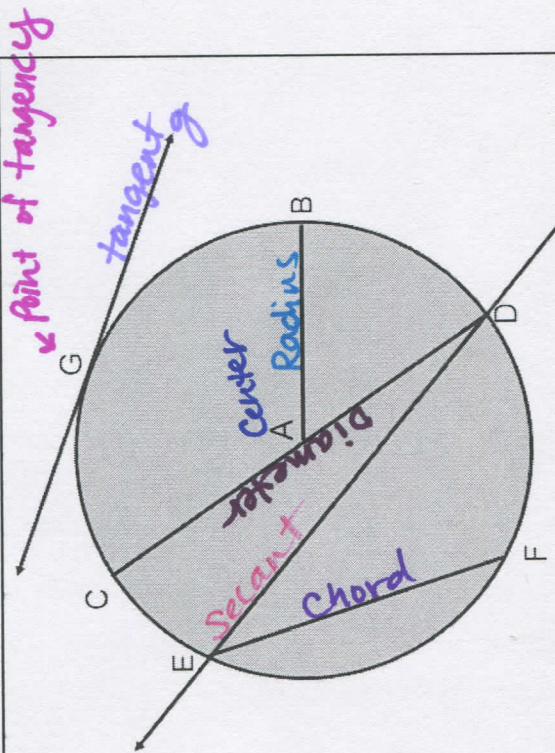


OBJECTIVE 1: Terminology

This chapter has a lot of terms and formulas to memorize and understand to be able to comprehend the question!

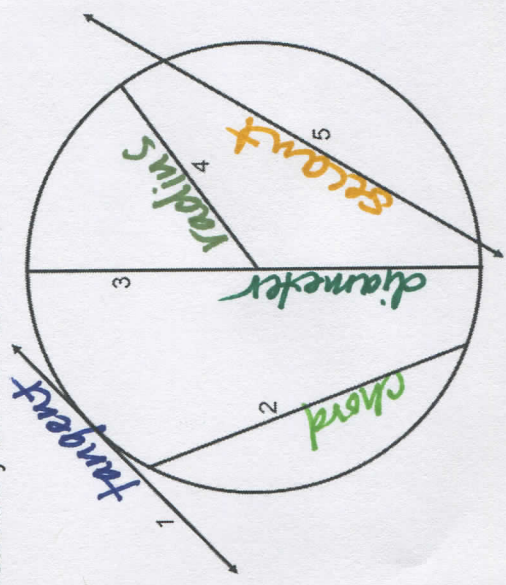
TASK 1: Labeling the Segments of Circle A

- A. Center O A
- B. Radius AB
- C. Diameter CD
- D. Chord EF
- E. tangent g
- F. Point of tangency G
- G. Secant EP



TASK 2: Label this circle using some of the same vocabulary terms from Task 1.

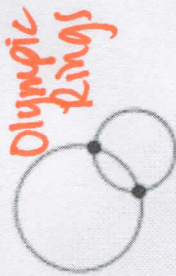
- 1. tangent
- 2. chord
- 3. diameter
- 4. radius
- 5. secant



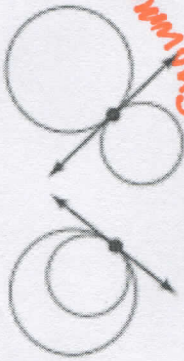
A circle is always named by its center!

OBJECTIVE 2: Coplanar Circles & Common Tangents

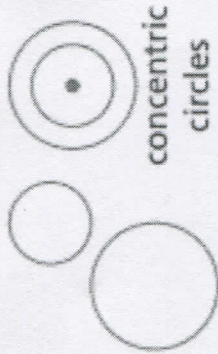
2 points of intersection



1 point of intersection (tangent circles)



no points of intersection

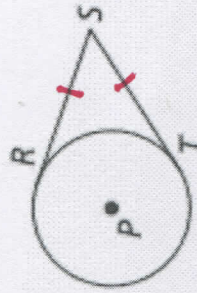
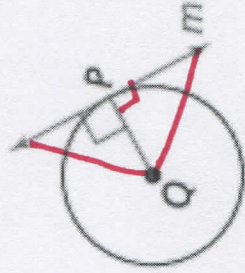


Bullseye
Dartboard

Rain drops in puddles

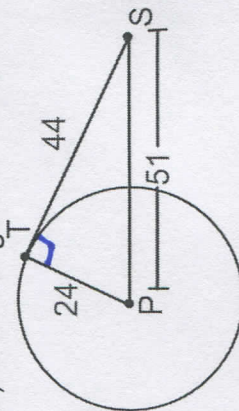
OBJECTIVE 3: Theorems

- Tangent Line to Circle Theorem
 - In a plane, a line is tangent to a circle iff the line is perpendicular to a radius of the circle at its endpoint on the circle.
- External Tangent Congruence Theorem
 - Tangent segments from a common external point are congruent.



TASK 3: Applying the Theorems

a) Is $\triangle STP$ tangent to circle P?

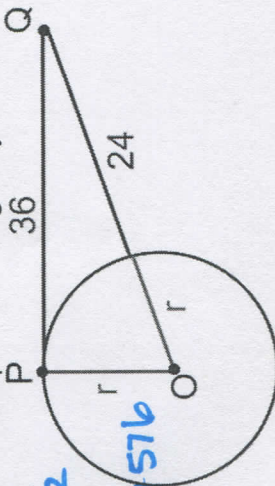


$$24^2 + 44^2 \stackrel{?}{=} 51^2$$

$$2512 < 2601$$

Not a Rt \triangle
it's obtuse

b) In the diagram, point P is a point of tangency. Find the radius, r , of circle O.



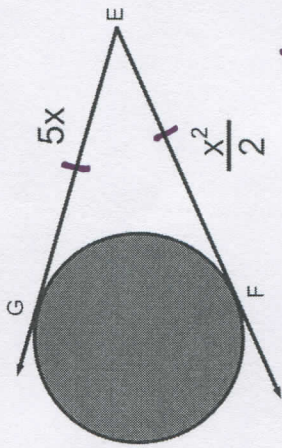
$$r^2 + 36^2 = (r + 24)^2$$

$$r^2 + 1296 = r^2 + 48r + 576$$

$$720 = 48r$$

$$\boxed{15 = r}$$

c) Use your knowledge about tangents and theorems to solve for EF and QS.



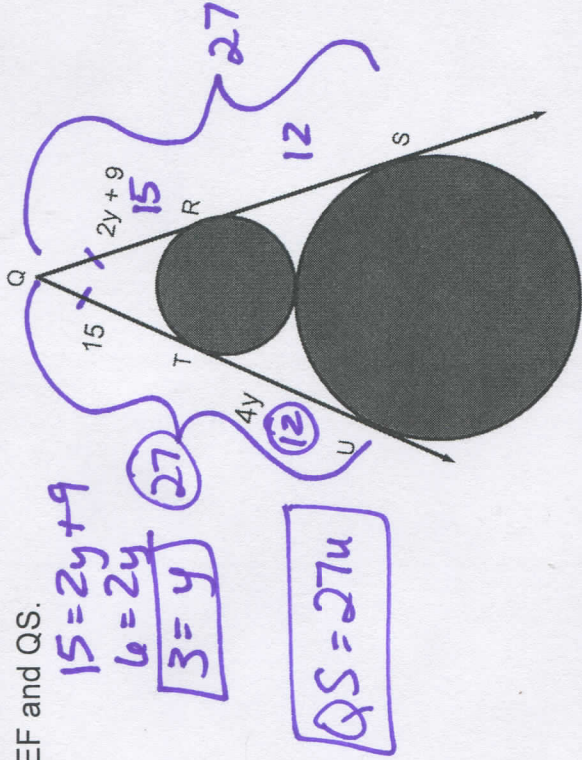
$$x = 6, 10$$

$$x = 10; EF = 50u$$

$$\frac{5x}{1} = \frac{x^2}{2}$$

$$10x = x^2$$

$$0 = x^2 - 10x \Rightarrow 0 = x(x - 10)$$



$$15 = 2y + 9$$

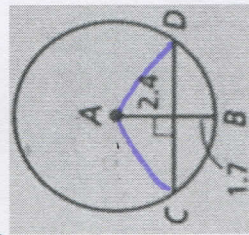
$$6 = 2y$$

$$3 = y$$

$$QS = 27u$$

TASK 4: Properties of Radii & Chords

a) Find CD.



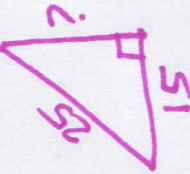
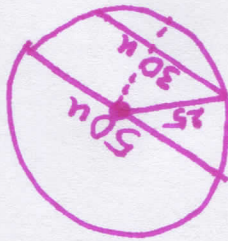
$$2.4^2 + x^2 = (4.1)^2$$

$$5.76 + x^2 = 16.81$$

$$x^2 = 11.05$$

$$x \approx 3.3$$

b) If a diameter is 50 unit long and a chord is 30 units long, find the distance between the two segments. (HINT: draw the diagram.)



$$3, 4, 5 \times 5$$

$$20u$$

Mistakes I made during the notes at the boards:

Still need help with: