9.2 Chord Properties Day 2 Homework

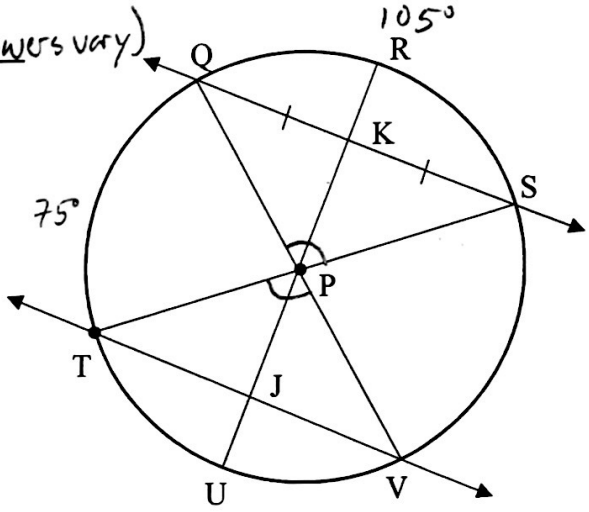
Name: Key

Date: _____ **Period:** _____

Learning Targets - Chord Properties

- I can determine and apply the relationship between congruent chords and their central angles and intercepted arcs.
- I can identify and apply the Perpendicular to a Chord Conjecture.
- I can identify and apply the Perpendicular Bisector of a Chord Conjecture.
- I can identify and apply the Chord Distance to Center Conjecture.

Use the figure at the right to find the missing information. Assume $\overline{TS}$ and $\overline{QV}$ and $\overline{RU}$ are diameters.



1. **Name two central angles** ∠QPR ∠RPS (answers vary)
2. **Name two chords** $\overline{QS}$, $\overline{TV}$ (answers vary)
3. **Name four right angles**

∠QKR, ∠RKS, ∠TJP, ∠VJP

4. $\angle QPS \cong$ ∠TPS
5. $\overline{QS} \cong$ $\overline{TV}$
6. $\widehat{QS} \cong$ $\widehat{TV}$

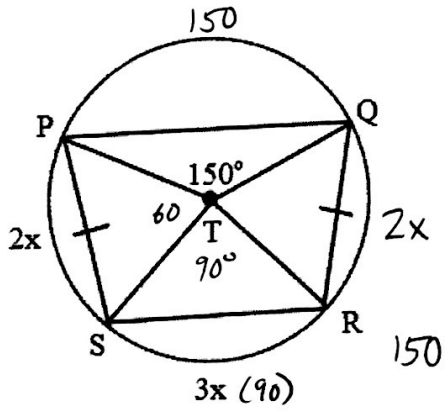
7. **If $m\widehat{QS} = 105°$, find the following:**

   a) $m\widehat{TV}$ = 105°

   b) $m\widehat{TQ}$ = 75° ← 180-105

   c) $m\widehat{SVT}$ = 180°

8.



150+2x+2x+3x=360

7x+150=360

7x=210

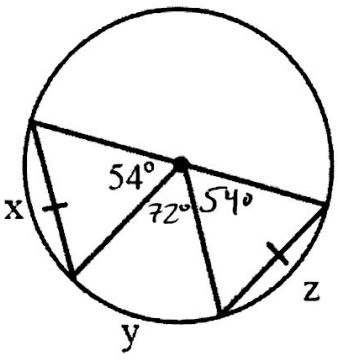
x=30

x = 30

$m\angle STR$ = 90°

$m\widehat{PR}$ = 150°

9.



54+54=108

180-108=72

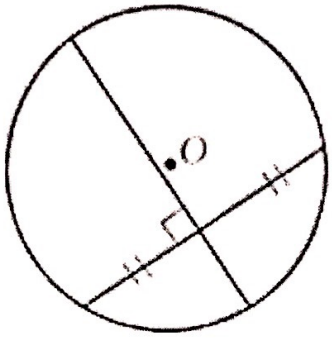
x = 54°

y = 72°

z = 54°

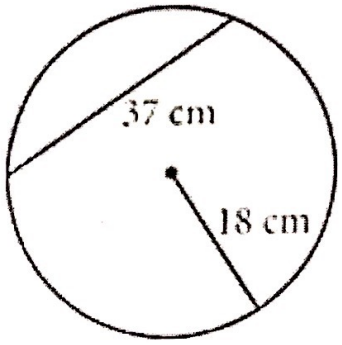
10. What's wrong with the pictures?

a.)



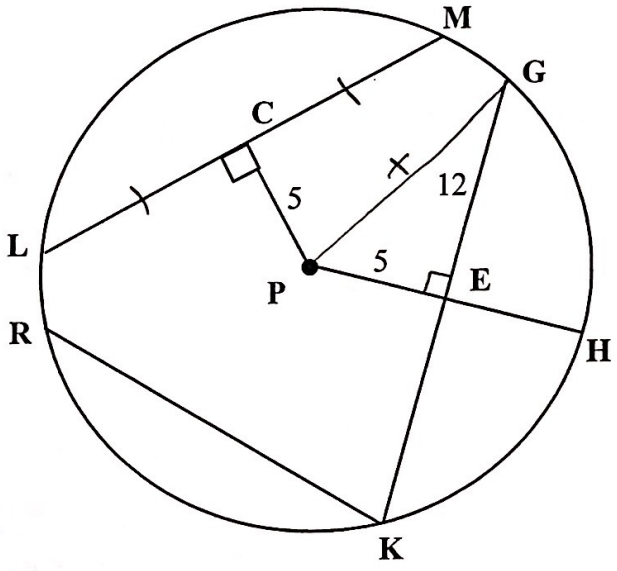
The perpendicular bisector of a chord MUST pass thru the center. (assume O is center)

b.)



If radius is 18, diameter is 36. 36 is longest chord possible. (37 too big)

Use circle P at the right to answer # 11 - 16



11. Find the length of the diameter of Circle P

$5^2+12^2=x^2$

$25+144=x^2$

$169=x^2$

$13=x$

Diameter = 26

12. Name six right angles

$\angle LCP$, $\angle MCP$

$\angle PEG$, $\angle PEK$, $\angle GEH$, $\angle KEH$

13. $\overline{ML} \cong \overline{GK}$

14. $\overset{\frown}{ML} \cong \overset{\frown}{GK}$

15. Find the length of $\overline{EH}$.

$13-5=$ 8

16. Can you determine whether $\overline{RK} \cong \overline{GK}$? Explain.

We cannot. We don't know if $\overset{\frown}{RK} \cong \overset{\frown}{GK}$, or if the perpendicular distance from P to $\overline{RK}$ is 5 units.