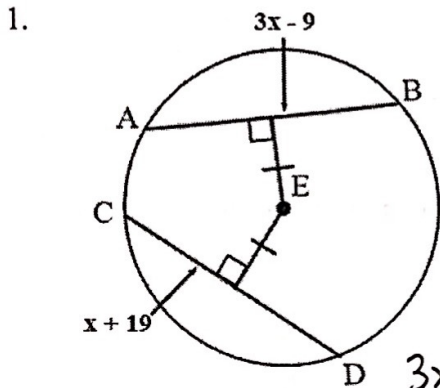**9.2 Chord Properties Day 1 Homework**

Name: _____Key_____

Date: _____ Period: _____

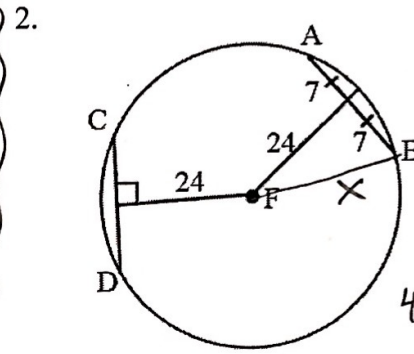Learning Targets - Chord Properties
- I can identify and apply the Perpendicular to a Chord Conjecture.
- I can identify and apply the Perpendicular Bisector of a Chord Conjecture.
- I can identify and apply the Chord Distance to Center Conjecture.
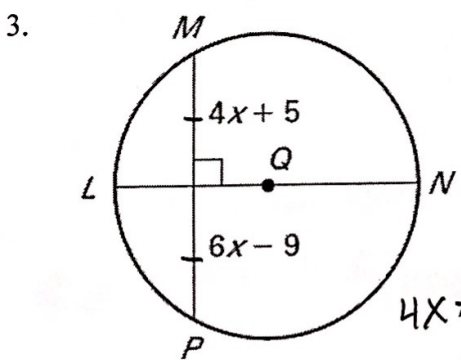
Find the missing information.

1.

$3x - 9 = x + 19$

$2x - 9 = 19$

$2x = 28$
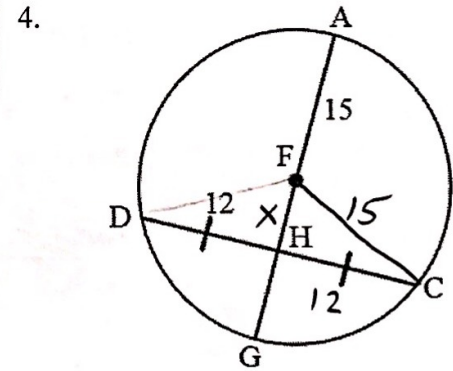
$x = 14$

$\overline{AB} \cong \underline{CD}$

$x = \underline{14}$

2.

$7^2 + 24^2 = x^2$

$49 + 576 = x^2$

$625 = x^2$

$25 = x$

$\overline{CD} \cong \underline{AB}$

$FB = \underline{25}$

3.

$4x + 5 = 6x - 9$

$5 = 2x - 9$
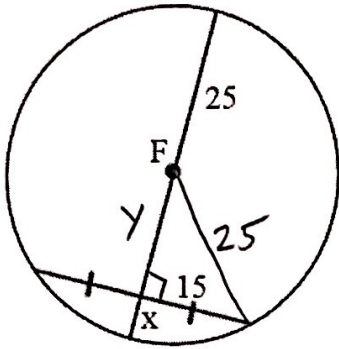
$14 = 2x$

$7 = x$

$x = \underline{7}$

4.

$x^2 + 12^2 = 15^2$

$x^2 + 144 = 225$

$x^2 = 81$

$9 = x$

$FH = \underline{9}$

5.

$15^2 + y^2 = 25^2$

$225 + y^2 = 625$

$y^2 = 400$

$y = 20$

$x = 25 - 20$

x = **5**

6.
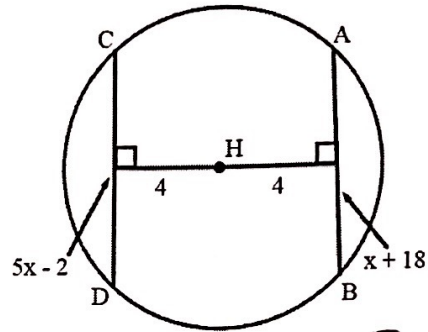
$5x - 2 = x + 18$

$4x - 2 = 18$

$4x = 20$

$x = 5$

x = **5**

Use circle P at the right to answer # 7 - 11

7. Name three chords

$\overline{LM}$, $\overline{GH}$, $\overline{NE}$

8. Name eight right angles

$\angle LCN$, $\angle NCM$, $\angle MCP$, $\angle PCL$

$\angle GJP$, $\angle PJH$, $\angle HJE$, $\angle EJG$

9. $\overline{GH} \cong \underline{\overline{LM}}$
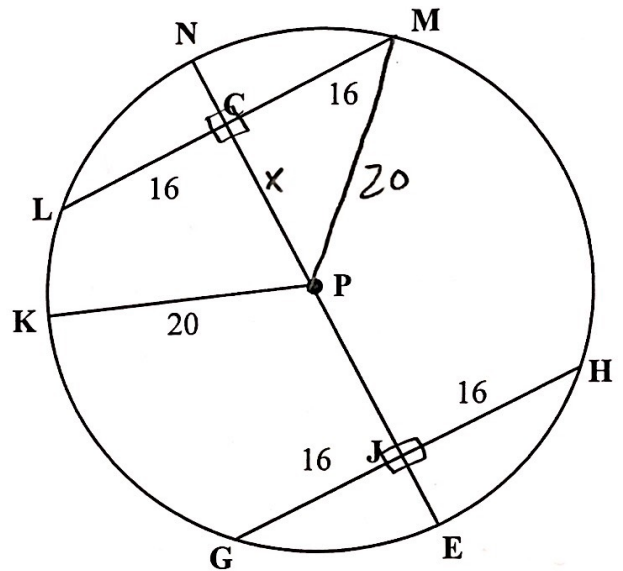
10. $\overline{PC} \cong \underline{\overline{PJ}}$
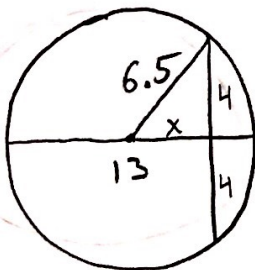
11. Find the length of $\overline{PC}$

$x^2 + 16^2 = 20^2$

$x^2 + 256 = 400$

$x^2 = 144$

$x = \boxed{12 = PC}$

12. A circle has a diameter of 13cm. In the circle, each of two chords is 8cm long. What is the shortest distance from each chord to the center of the circle? Round to the nearest tenth.

$x^2 + 4^2 = 6.5^2$

$x^2 + 16 = 42.25$

$x^2 = 26.25$

$\boxed{x \approx 5.1 \text{ cm}}$