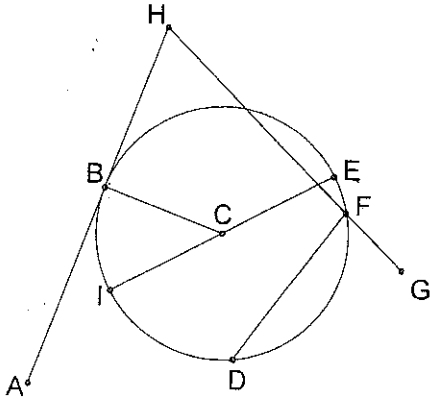


Geometry Honors

Circle Vocab.

Name Answer Key

Match the vocabulary term with the part of the picture that illustrates the term. Be as specific as possible



1. H \overline{HA}
2. M \overline{IE}
3. D \overline{HG}
4. B \overline{DF}
5. E \widehat{DE}
6. L \overline{IC}
7. P \widehat{IBE}
8. J $\angle BCE$
9. G $m\angle BCE$
10. C POINT B

- | | |
|----------------------|------------------|
| A) CENTER | B) CHORD |
| C) POINT OF TANGENCY | D) SECANT |
| E) MINOR ARC | F) MAJOR ARC |
| G) $m\widehat{BE}$ | H) TANGENT |
| J) CENTRAL ANGLE | K) COMPLEMENTARY |
| L) RADIUS | M) DIAMETER |
| N) $m\angle BCE$ | P) SEMI-CIRCLE |

Fill in the blank with Always, Sometimes or Never

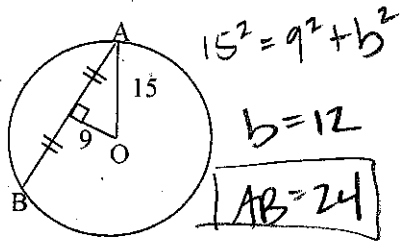
11. A chord is Sometimes a diameter
12. Circles are always similar
13. Three letters used in naming an arc Sometimes means the arc is major. (could be semi)
14. Radii in the same circle are always congruent.
15. A diameter's length is always half the radius.

Chord Worksheet:

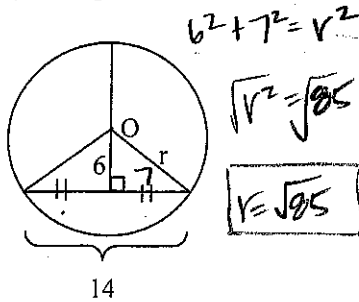
Answer Key

1. Determine the indicated values.

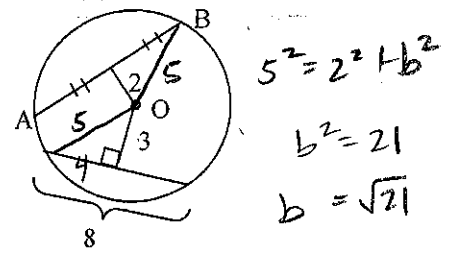
a) Length of AB.



b) Length of r.



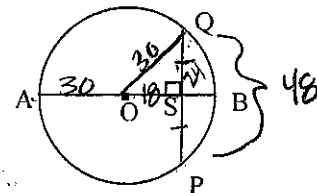
c) Length of AB



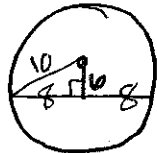
2. In the following circle the radius is 30 cm. The chord PQ is perpendicular to the diameter AOB. If O is circle center and PQ is 48 cm, find the length of AS.

$24^2 + b^2 = 30^2$
 $b = 18$

$AS = 30 + 18 = 48$

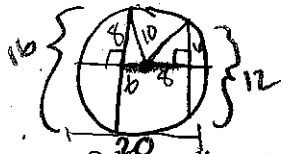


3. In a circle, a chord is 16 cm in length and is 6 cm from the center of a circle. Calculate the length of the diameter.



$d = 20$

4. Two parallel chords of a circle, MN and PQ have lengths 12 cm and 16 cm. If the diameter of the circle is 20 cm, find the perpendicular distance between the chords.

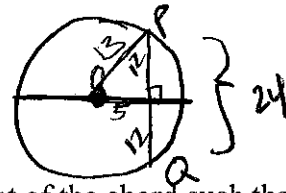


\perp distance = 14

5. A circle with center O has a diameter of 26 cm. A chord, PQ, is 24 cm in length. How far is the chord from the center of the circle?

$13^2 = 12^2 + b^2$

$b = 5$

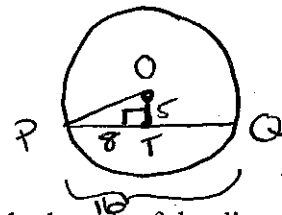


6. In a circle with center O, a chord PQ is 16 cm in length. If T is a point of the chord such that $OT \perp PQ$ and $OT = 5$ cm, calculate the length of the radius.

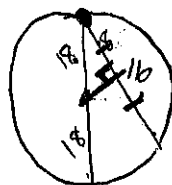
$5^2 + 8^2 = r^2$

$89 = r^2$

$r = \sqrt{89}$



7. A diameter and a chord of a circle have a common end point. If the length of the diameter is 36 cm and the length of the chord is 16 cm, how far is the chord from the center of the circle?



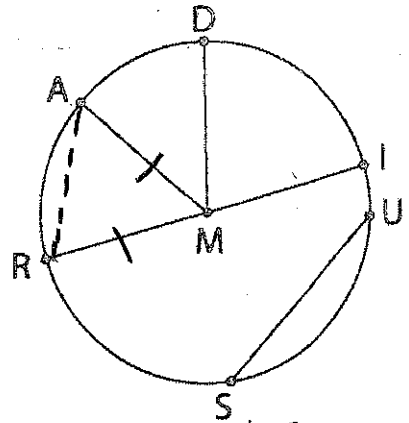
$9^2 + b^2 = 18^2$

$\sqrt{b^2} = \sqrt{260}$

$b = 2\sqrt{65}$

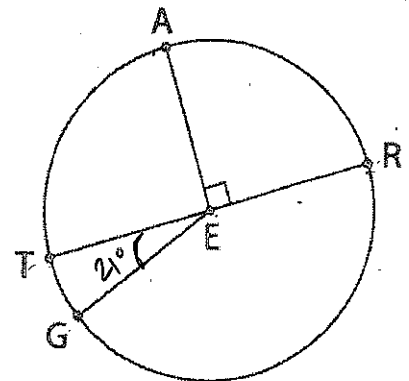
For problems 1 - 8, refer to $\odot M$.

- Name the center of the circle. M
- Name a chord that is also a diameter. RI
- If $MD = 5$, find RI . 10
- Is \overline{MI} a chord of $\odot M$? NO What is it? radius
- Is $\overline{MA} = \overline{MI}$? YES Why? radii
- Name four radii of $\odot M$. $\overline{MR}, \overline{MA}, \overline{MD}, \overline{MI}$
- If $RI = 11.8$, find MA . 5.9
- Draw \overline{AR} . What type of triangle is $\triangle MAR$? ISOSCELES Explain. 2 \cong sides



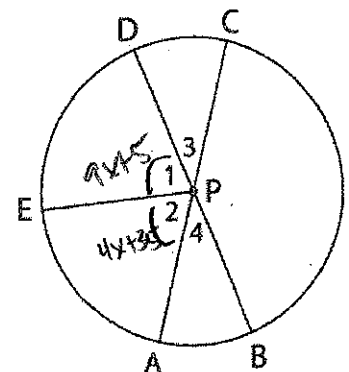
For problems 9 - 13, refer to $\odot E$. If $m\angle TEG = 21^\circ$ and \overline{TR} is a diameter, determine whether each arc is a minor arc, major arc, or a semicircle. Then, find the degree measure of each arc.

	Minor, major, or semicircle	Arc measure
9. \widehat{TG}	<u>Minor</u>	<u>21°</u>
10. \widehat{ATR}	<u>Major</u>	<u>270°</u>
11. \widehat{TAR}	<u>Semi</u>	<u>180°</u>
12. \widehat{ARG}	<u>Major</u>	<u>249°</u>
13. \widehat{AR}	<u>Minor</u>	<u>90°</u>



In $\odot P$, $m\angle 1 = m\angle 2$, $m\angle 1 = 9x + 5$, $m\angle 2 = 4x + 35$ with diameters \overline{AC} and \overline{BD} . Find each of the following.

- $x =$ 6
- $m\angle 3 =$ 62°
- $m\angle CPB =$ 118°
- $m\widehat{AE} =$ 59°
- $m\widehat{EC} =$ 121°
- $m\widehat{CBE} =$ 239°



Answers - 9) 21° 10) 270° 11) 180° 12) 249°

13) 90° 14) 6 15) 62° 16) 118° 17) 59° 18) 121° 19) 239°

$$9x + 5 = 4x + 35$$

$$5x = 30$$

$$x = 6$$