

Geometry

Name: _____

Unit 7 Agenda - Circles Part A

DATE	DAY	LESSON	PAGE	HOMEWORK
Wednesday 2/1	7.1	Intro to Circles & Central Angles	2 – 5	DM HW 7.1 due on 2/7 @ 8:20AM
Thursday 2/2	7.2	Inscribed Angles	6 – 9	
Friday 2/3	7.3	Warm Up & Scratch Off Activity (extra riddle worksheet)	10 – 12	
Monday 2/6	7.4	Review for Quiz	13 – 15	Finish DM and Quiz Review by tomorrow!
Tuesday 2/7	7.5	QUIZ TODAY!!! GOOD LUCK!	-----	
Wednesday 2/8	7.6	Two Chords (Vertex Inside)	16 – 19	DM HW 7.2 due on 2/14 @ 8AM
Thursday 2/9	7.7	Tangents & Secants (Vertex Outside)	20 – 22	
Friday 2/10	7.8	Putting It All Together Scavenger Hunt	23 – 24	
Monday 2/13	7.9	Test Review TEST DAY (option 1)!!!	25 – 27	Finish DM and Test Review by tomorrow!
Tuesday 2/14	7.10	TEST DAY (option 2)!!! GOOD LUCK!!!	-----	

Agenda is subject to change!!!

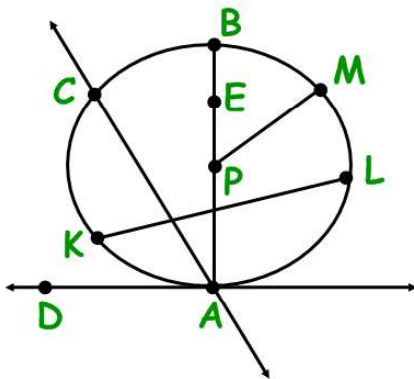
Geometry – DAY 7.1

Introduction to Circles

Name: _____

Date: _____

Terminology. (List one example of each.)



- Circle
- Chord
- Radius
- Diameter
- Tangent
- Secant
- Major Arc
- Minor Arc
- Semicircle
- Central Angle

[illegible]

Now Match the Definitions.

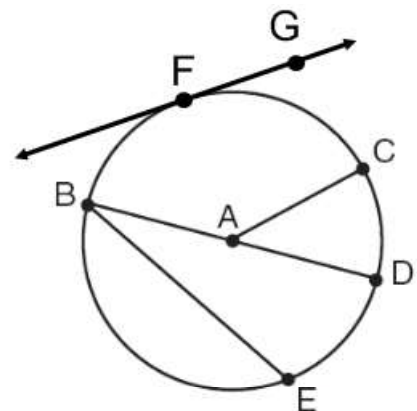
1. the set of all points equidistant from a point
2. the distance from a point on a circle to the center
3. a line segment whose endpoints lie on a circle
4. a chord that passes through the center of a circle
5. a line that intersects a circle at exactly two points
6. a line that intersects a circle at exactly one point
7. an angle whose vertex is the center of a circle
8. an arc whose endpoints lie on the diameter
9. an arc that is less than a semicircle
10. an arc that is greater than a semicircle

[illegible]

- a. central angle
- b. circle
- c. chord
- d. diameter
- e. major arc
- f. minor arc
- g. radius
- h. secant
- i. semicircle
- j. tangent

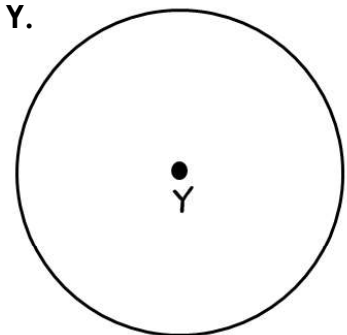
Let's Practice.

1. Name the circle.
2. Name a radius.
3. Name a diameter.
4. Name a chord that is not the diameter.
5. Name the central angle.
6. Name a minor arc.
7. Name a semicircle.
8. Name a major arc.
9. Name a tangent.

[illegible]

Let's Draw. Using a straightedge, draw the following on circle Y.

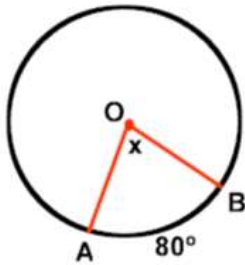
1. a chord BG
2. a diameter AB
3. a tangent MN
4. a radius CY
5. a secant DX



YOU MUST REMEMBER:

- a circle has _____ degrees.
- vertical angles are _____.
- a semicircle has _____ degrees.
- linear pairs are _____.

Measures of Central Angles



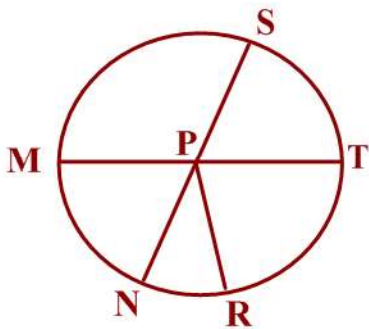
$\angle AOB$ is the _____.

AB is the _____.

$m\angle AOB = mAB =$ _____.

Let's Practice.

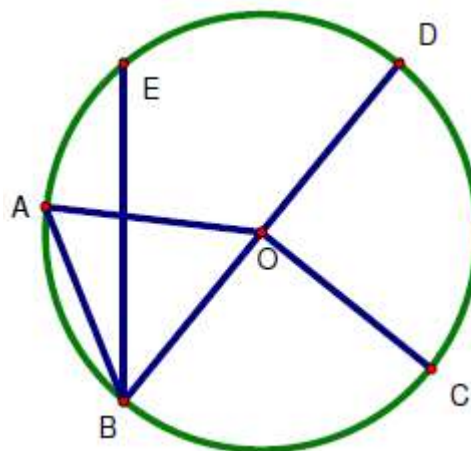
In $\odot P$, $m\angle SPT = 51^\circ$, $m\angle NPR = 29^\circ$, and \overline{SN} and \overline{MT} are diameters. Find each measure.



- | | | |
|--------------|---------------------|--------------------|
| 1. $mNR =$ | 2. $mST =$ | 3. $m\angle MPN =$ |
| 4. $mTSR =$ | 5. $mMN =$ | 6. $mMST =$ |
| 7. $mNMS =$ | 8. $m\angle MPS =$ | 9. $mSRN =$ |
| 10. $mNTS =$ | 11. $m\angle TPR =$ | 12. $mRT =$ |

Central Angles Classwork

1. Identify and name each of the following from $\odot O$. Be sure to use the correct notation. BD is a diameter.



_____ a. Two different central angles

_____ b. A minor arc

_____ c. A major arc

_____ d. A semicircle

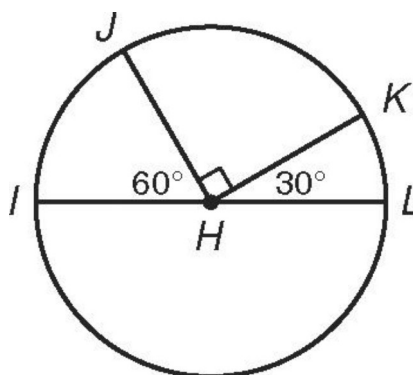
_____ e. Two different chords

_____ f. The central angle subtended by AD

Find each measure.

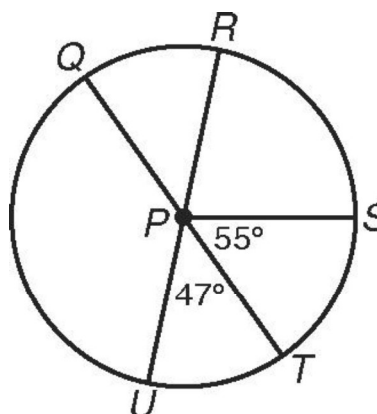
IL is a diameter.

2. $m\angle LK$ _____, $m\angle IK$ _____



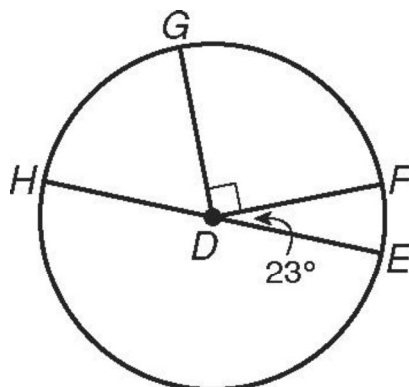
RU & QT are diameters.

3. $m\angle QS$ _____, $m\angle RQT$ _____



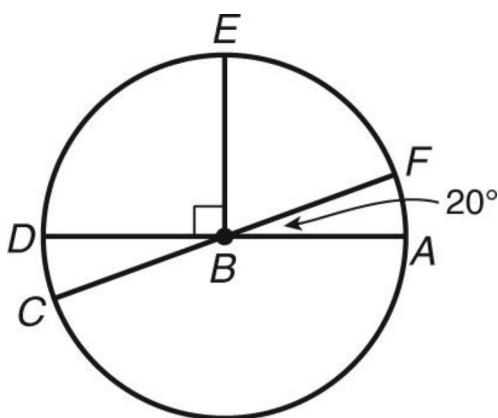
HE is a diameter

4. $m\widehat{HG}$ _____, $m\widehat{FEH}$ _____

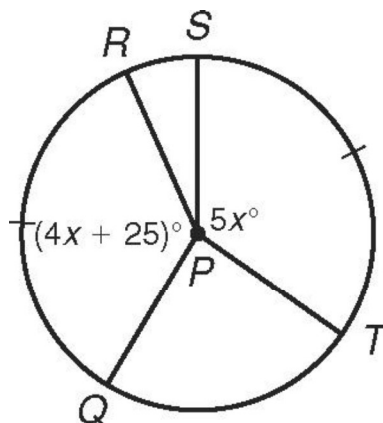


DA and FC are diameters.

5. $m\widehat{EF}$ _____, $m\widehat{CEA}$ _____

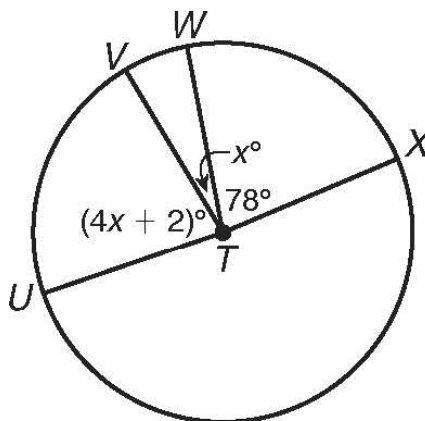


6. $\angle QPR$ _____



UX is a diameter.

7. $\angle UTW$ _____, $m\widehat{UV}$ _____



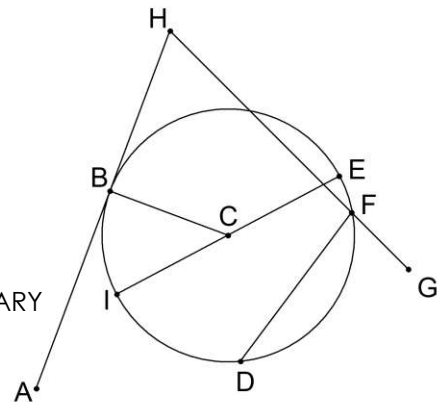
Geometry – DAY 7.2

Name: _____

Date: _____

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

- | | | |
|--------------------------|----------------------|------------------|
| 1. _____ \overline{HA} | A) CENTER | B) CHORD |
| 2. _____ \overline{IE} | C) POINT OF TANGENCY | D) SECANT |
| 3. _____ \overline{HG} | E) MINOR ARC | F) MAJOR ARC |
| 4. _____ \overline{DF} | G) $m\widehat{BE}$ | H) TANGENT |
| 5. _____ \widehat{DE} | J) CENTRAL ANGLE | K) COMPLEMENTARY |
| 6. _____ \overline{IC} | L) RADIUS | M) DIAMETER |
| 7. _____ \widehat{IBE} | N) $m\angle BCI$ | P) SEMI-CIRCLE |
| 8. _____ $\angle BCE$ | | |
| 9. _____ $m\angle BCE$ | | |
| 10. _____ POINT B | | |

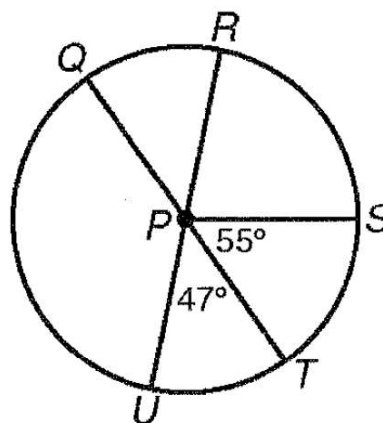


Fill in the blank with Always, Sometimes, or Never.

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

Use the diagram below to find the following measurements.

16. $m\angle QPR = \underline{\hspace{2cm}}$
17. $m\angle RPS = \underline{\hspace{2cm}}$
18. $mST = \underline{\hspace{2cm}}$
19. $mQST = \underline{\hspace{2cm}}$
20. $mRT = \underline{\hspace{2cm}}$



Geometry – DAY 7.2
Inscribed Angles

Name: _____

Date: _____

More Arc Measures

An _____ is an angle with its vertex
 “on” the circle, formed by two intersecting chords.

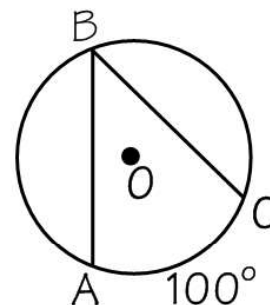
angle name: _____

The measure of an inscribed angle is equal to

_____.

Formula: _____

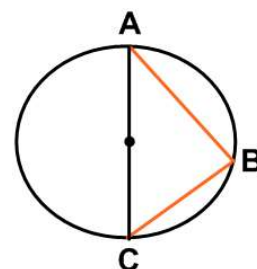
$m\angle ABC =$ _____



Special Situation #1

An angle inscribed in a semicircle is a _____.

$m\angle ABC =$ _____

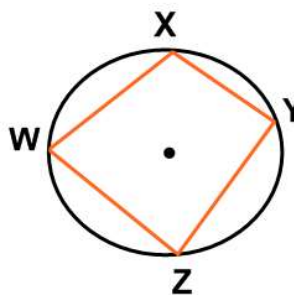


Special Situation #2

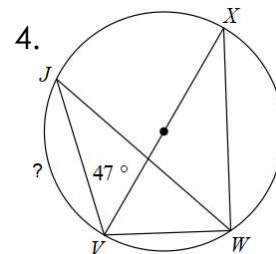
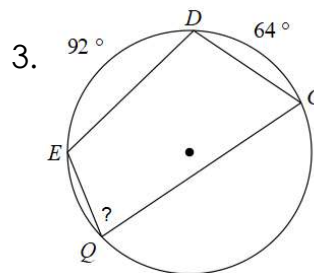
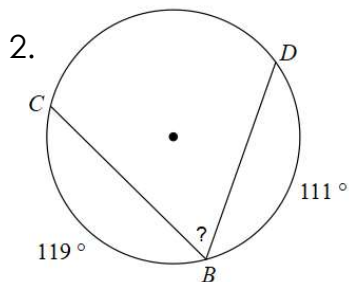
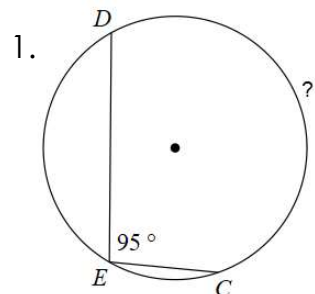
If a quadrilateral is inscribed in a circle, then its
 opposite angles are _____.

$m\angle X + m\angle Z =$ _____

$m\angle W + m\angle Y =$ _____



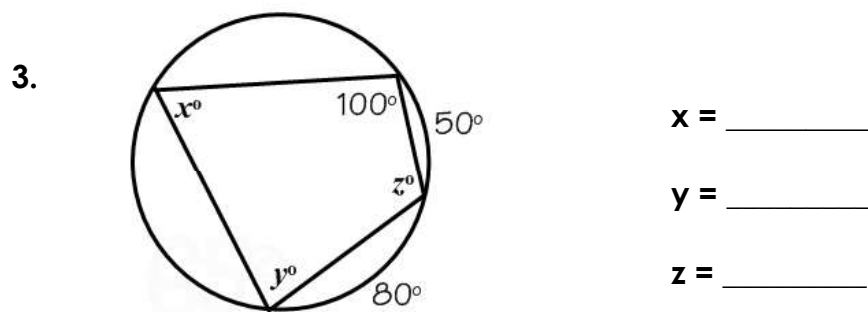
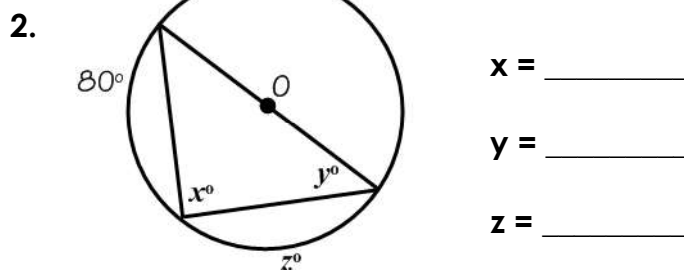
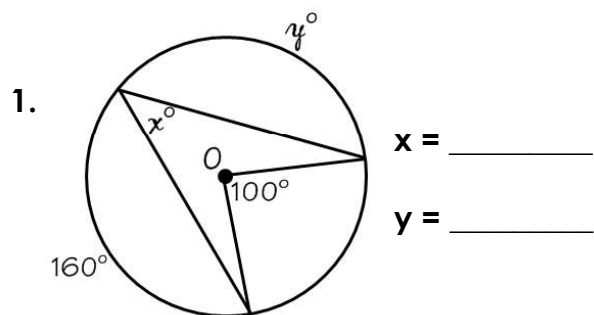
Quick Problems: Find the missing value.



Let's Practice!

Using the diagrams below, find the following values.

You may assume that O stands for the center of the circle.



4. $m\angle MNP =$

5. $m\angle MQP =$

6. $m\angle MNQ =$

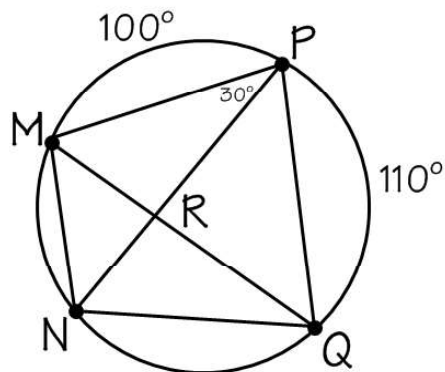
7. $m\angle PNQ =$

8. $m\angle MN =$

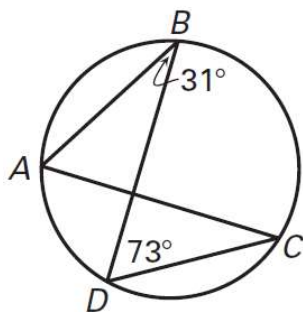
9. $m\angle NQ =$

10. $m\angle MPQ =$

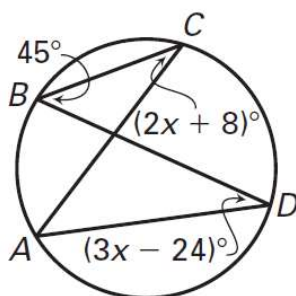
11. $m\angle NRQ =$



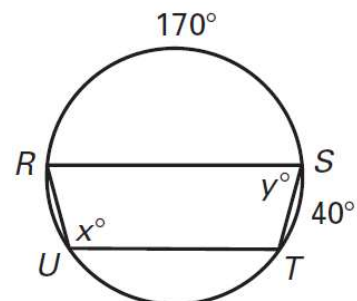
12. Find the measure of angle A and angle C.



13. Solve for x. Then find the measure of angles A and C.



14. Solve for x and y.

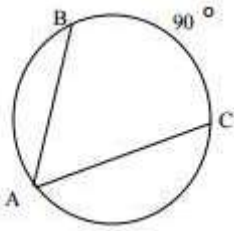


Geometry – DAY 7.2
Classwork – Inscribed Angles

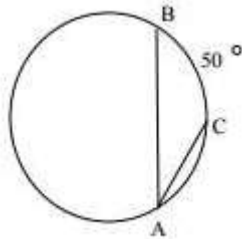
Name: _____

Date: _____

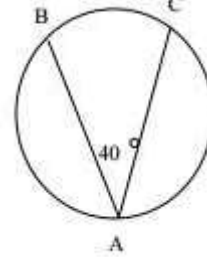
1. Find $m\angle A$.



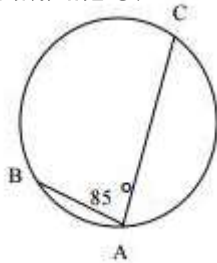
2. Find $m\angle A$.



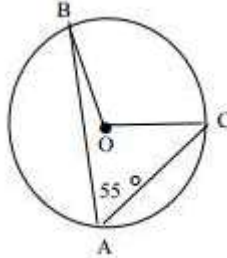
3. Find $m\widehat{BC}$.



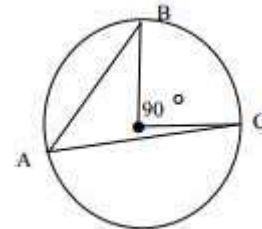
4. Find $m\widehat{BC}$.



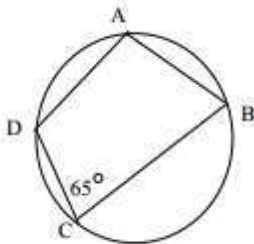
5. Find $m\angle BOC$.



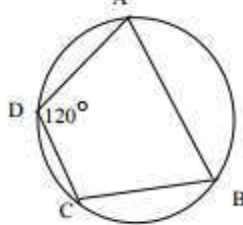
6. Find $m\angle A$.



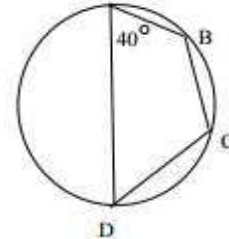
7. Find $m\angle A$.



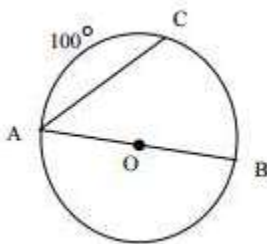
8. Find $m\angle B$.



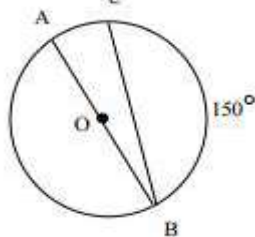
9. Find $m\angle C$.



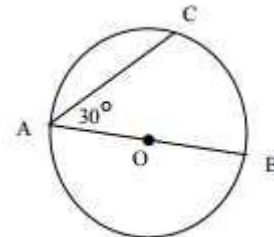
10. Find $m\angle A$.



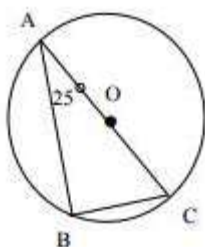
11. Find $m\angle B$.



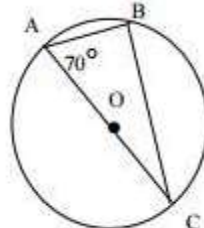
12. Find $m\widehat{AC}$.



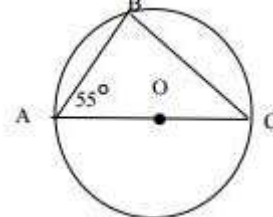
13. Find $m\angle C$.



14. Find $m\angle C$.



15. Find $m\angle C$.

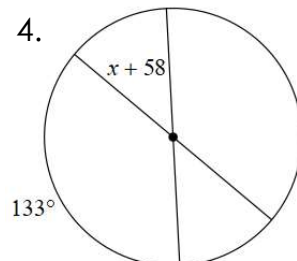
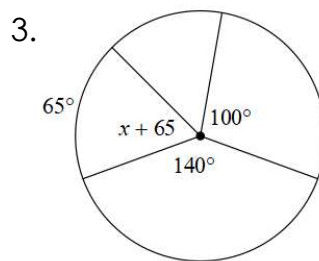
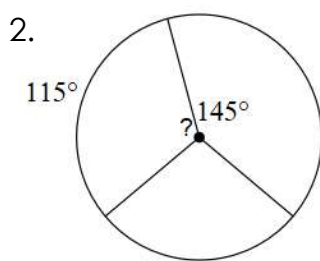
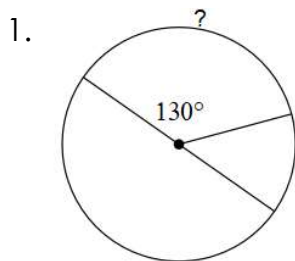


GEOMETRY – DAY 7.3
WARM-UP

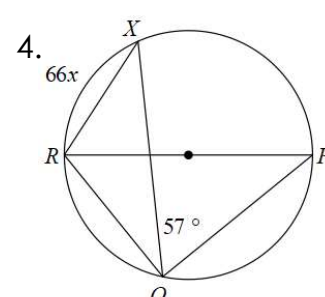
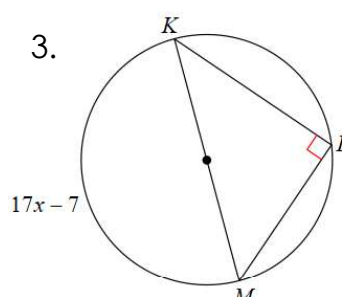
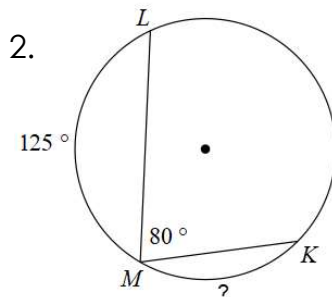
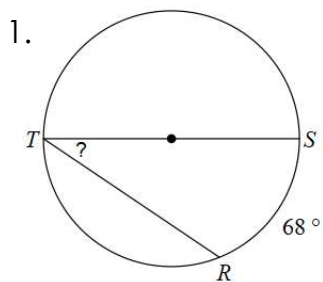
Name: _____

Date: _____

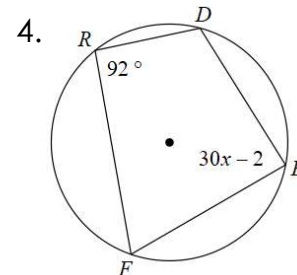
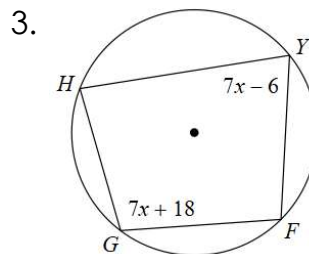
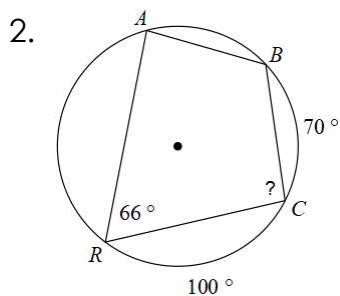
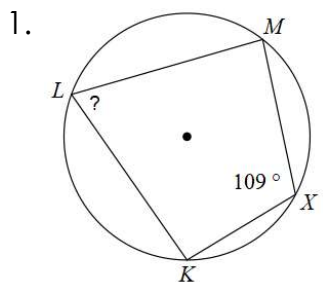
CENTRAL ANGLES



INSCRIBED ANGLES



INSCRIBED QUADRILATERALS



Name:

Hour: _____

(Central And Inscribed Angles Of Circles Practice)

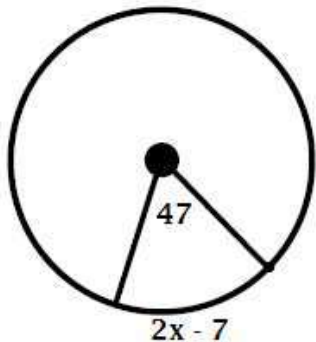
Directions: Solve each problem to find the value of x and find its matching answer in the answer box. Decode the answer to the riddle using the letter of the answer associated with each question. Show all of your work.

Answer:

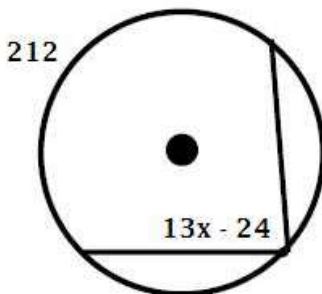
4 1 7 11 13 12 1 14 2 1 3 6 1 15 1 5

$$\frac{\overline{5} \ \overline{1} \ \overline{11} \ \overline{7} \ \overline{2}}{\overline{11}} \quad \frac{\overline{9} \ \overline{8} \ \overline{10} \ \overline{6} \ \overline{14}}{\overline{!}}$$

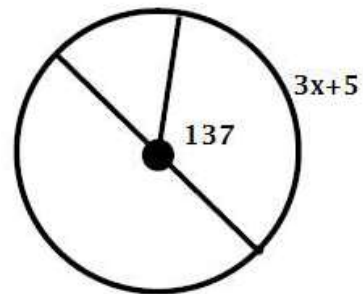
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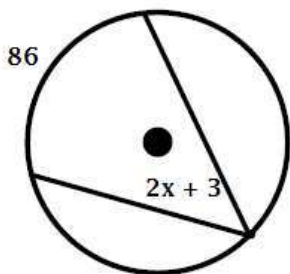
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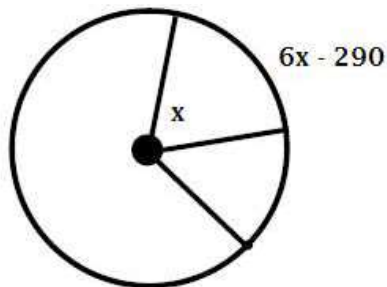
3.



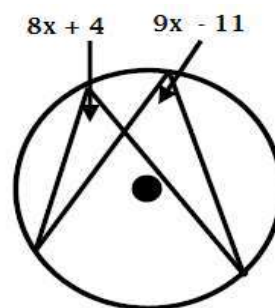
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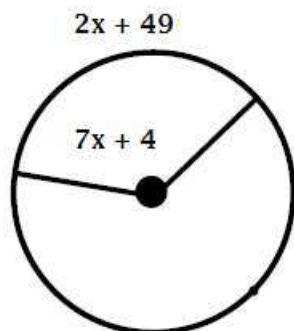
5.



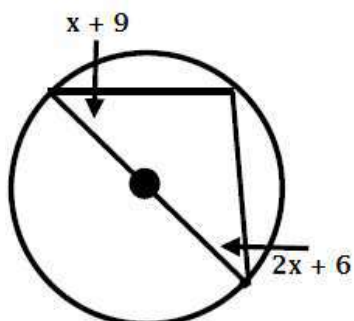
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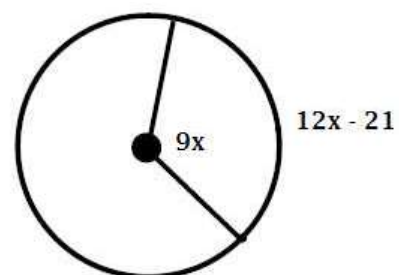
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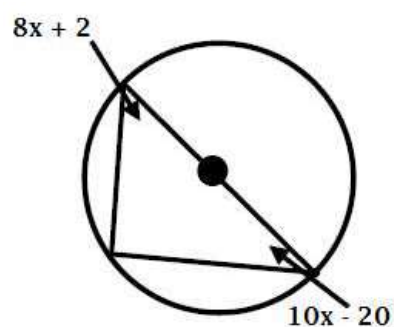
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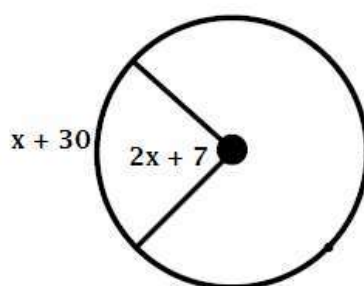
9.



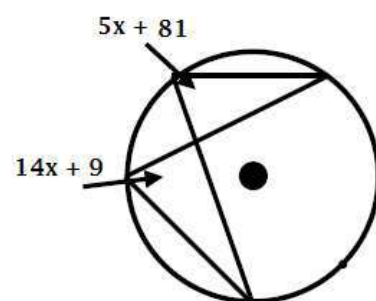
10.



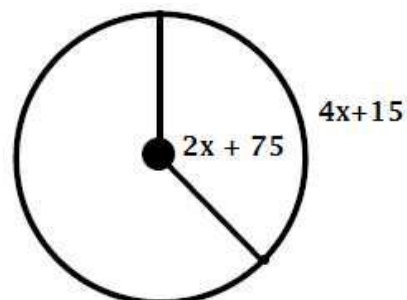
11.



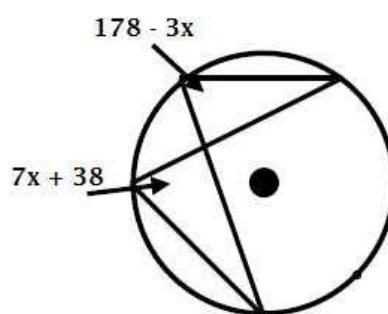
12.



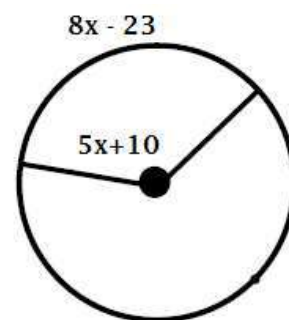
13.



14.



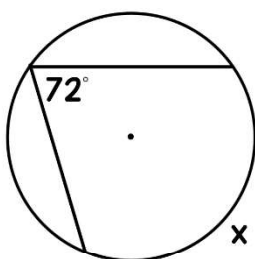
15.



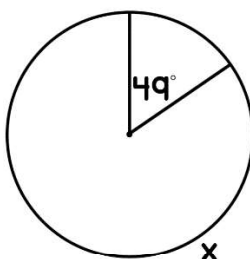
Answer Box:

A	23	B	20	C	9	E	27	H	10
I	6	N	15	O	25	P	7	R	58
S	8	T	14	U	30	V	11	Y	44

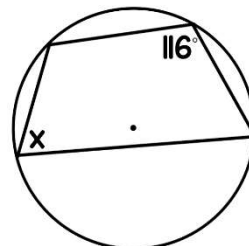
1. $x =$ _____



2. $x =$ _____



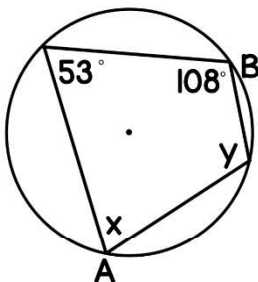
3. $x =$ _____



4. $x =$ _____

$y =$ _____

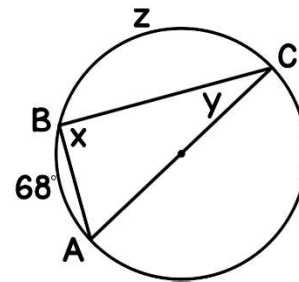
$m\widehat{AB} =$ _____



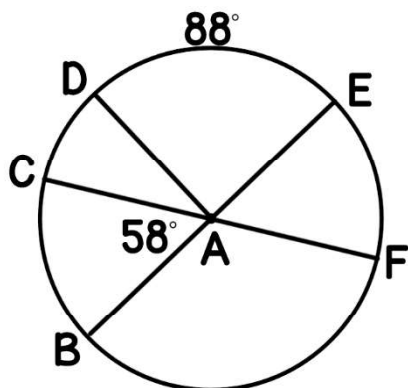
5. $x =$ _____

$y =$ _____

$z =$ _____



6.



$m\angle EAF =$ _____

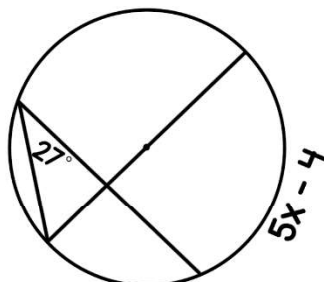
$m\widehat{CB} =$ _____

$m\widehat{DE} =$ _____

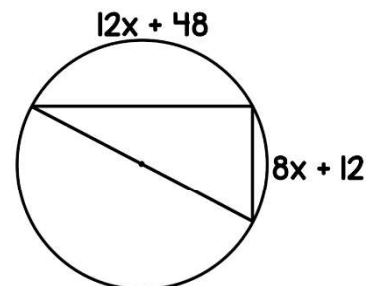
$m\angle DAF =$ _____

$m\widehat{BF} =$ _____

7. $x =$ _____



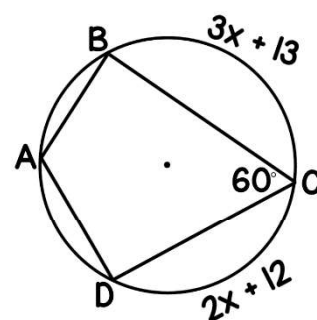
8. $x =$ _____



9. $m\widehat{DB} =$ _____

$x =$ _____

$m\angle DAB =$ _____

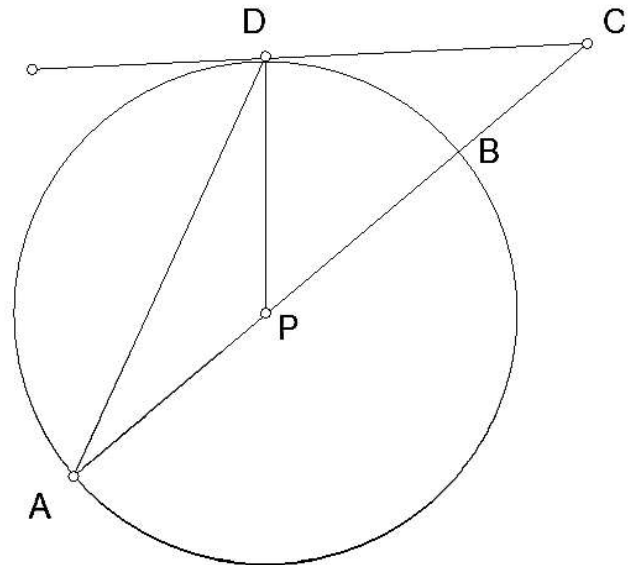


Geometry – DAY 7.4
Quiz Review: Circle Vocab and Central/Inscribed Angles

Name: _____
 Date: _____

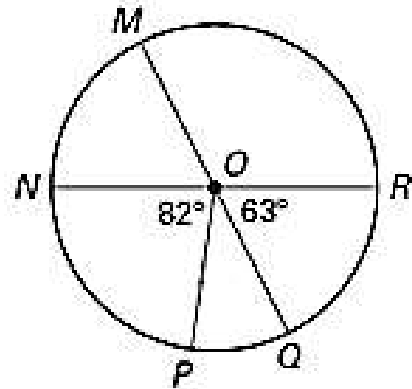
Refer to the figure at the right for questions 1-8.

1. Name three radii of the circle.
2. Name a diameter.
3. Name two chords.
4. Name a segment tangent to $\odot P$.
5. Name a segment that is a secant of $\odot P$ and contains a diameter.
6. Name a point in the interior of the circle.
7. Name three points that lie on the circle.
8. If $AP = 4$ in., find AB .

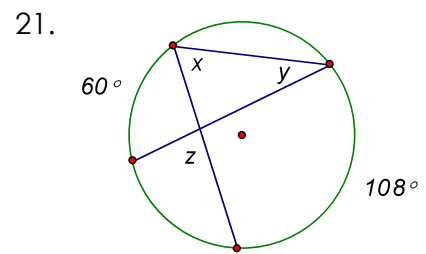
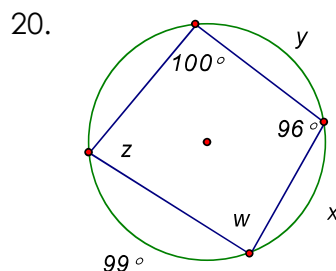
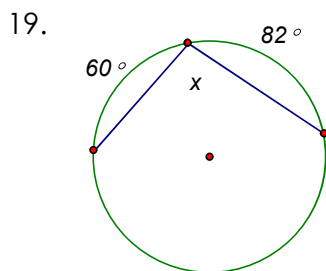


For #9-18, write the measures in the blanks provided.

- | | |
|----------------------------|----------------------------|
| _____ 9. $m\widehat{MN}$ | _____ 10. $m\widehat{NQ}$ |
| _____ 11. $m\widehat{NQR}$ | _____ 12. $m\widehat{MRP}$ |
| _____ 13. $m\widehat{QR}$ | _____ 14. $m\widehat{MR}$ |
| _____ 15. $m\widehat{QMR}$ | _____ 16. $m\widehat{PQ}$ |
| _____ 17. $m\widehat{PRN}$ | _____ 18. $m\widehat{MQN}$ |



Find the value of the variables.



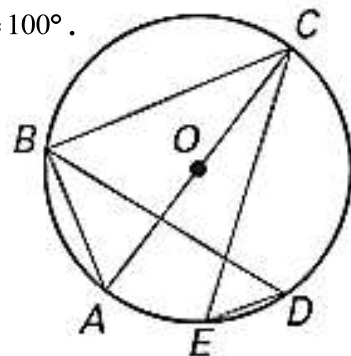
Find the measure of the arc or angle in $\odot O$, given $m\widehat{CD} = 108^\circ$ and $m\widehat{BE} = 100^\circ$.

_____ 22. $m\angle ABC$ _____ 23. $m\angle CED$

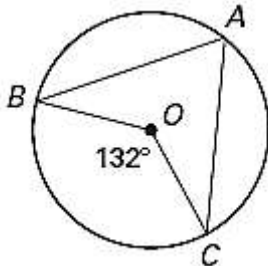
_____ 24. $m\angle BDE$ _____ 25. $m\angle CBD$

_____ 26. $m\angle ABD$ _____ 27. $m\angle BCE$

_____ 28. $m\widehat{AD}$ _____ 29. $m\widehat{ABC}$

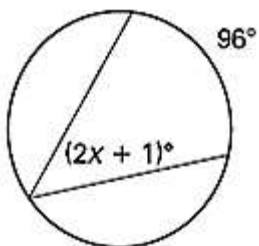


_____ 30. Find $m\angle BAC$

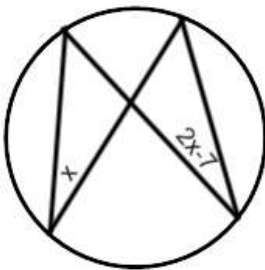


Find the value of x .

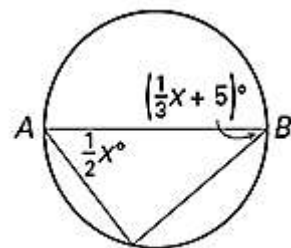
_____ 31.



_____ 32.



_____ 33. \overline{AB} is a diameter.



In $\odot A$, \overline{HE} is a diameter.

_____ 34. Name the intercepted arc for $\angle HTC$.

_____ 35. If $m\angle HTC = 52^\circ$, find $m\widehat{CH}$.

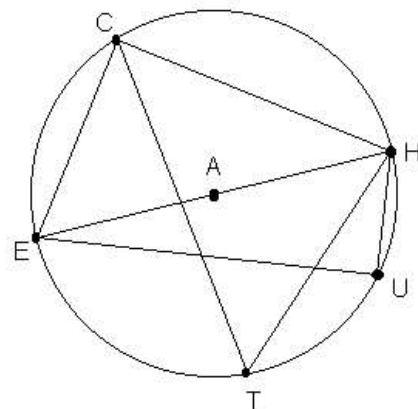
_____ 36. Name the intercepted arc for $\angle TCH$.

_____ 37. Find $m\angle ECH$.

_____ 38. If $m\angle HTC = 52^\circ$, find $m\angle CEH$.

_____ 39. Name an inscribed angle.

_____ 40. If $m\angle HTC = 52^\circ$, find $m\widehat{CEH}$.



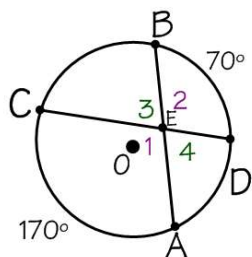
Geometry – DAY 7.6
Arcs and Chords

Name: _____

Date: _____

New: Angles formed by Two Chords

Angle Formed Inside by Two Chords =



$$m\angle BED = \underline{\hspace{2cm}}$$

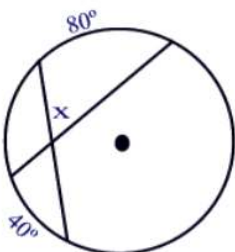
$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

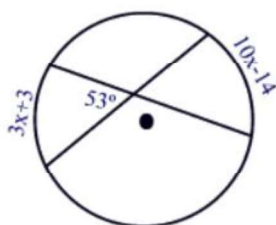
$$\left. \begin{array}{l} m\angle 1 = m\angle 2 \\ m\angle 3 = m\angle 4 \end{array} \right\} = \underline{\hspace{2cm}}$$

Examples

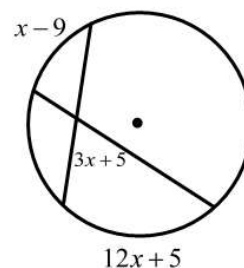
1. $x = \underline{\hspace{2cm}}$



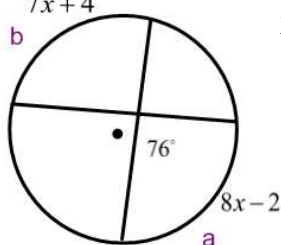
2. $x = \underline{\hspace{2cm}}$



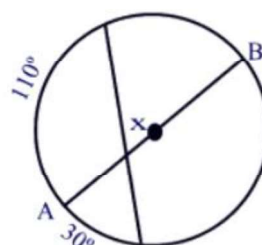
3. $x = \underline{\hspace{2cm}}$



4. $\begin{array}{l} 7x+4 \\ b \end{array}$ $\begin{array}{l} x = \underline{\hspace{2cm}} \\ a = \underline{\hspace{2cm}} \\ b = \underline{\hspace{2cm}} \end{array}$ $\begin{array}{l} 76^\circ \\ a \end{array}$ $8x-2$

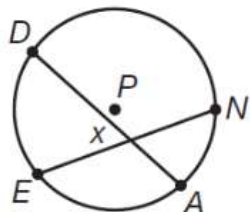


5. $x = \underline{\hspace{2cm}}$

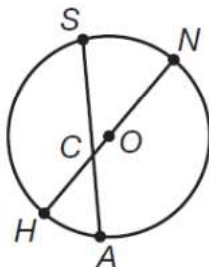


You Try!

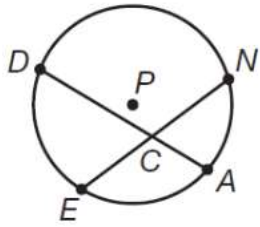
1. In circle P shown below, $m\widehat{DE} = 75^\circ$ and $m\widehat{NA} = 49^\circ$. Find the value of x .



2. In circle O shown below, $m\widehat{SN} = 55^\circ$ and $m\widehat{HA} = 35^\circ$. Find $m\angle SCH$.



3. In circle P shown below, $m\widehat{DN} = 144^\circ$ and $m\angle NCA = 68^\circ$. Find $m\widehat{EA}$.



- 4.
-
- $m\widehat{LM} = 90^\circ$
 $m\widehat{ON} = 36^\circ$
 $m\angle LRM = \underline{\hspace{2cm}}$
 $m\angle NRM = \underline{\hspace{2cm}}$

- 5.
-
- $m\widehat{PS} = 170^\circ$
 $m\widehat{QR} = 28^\circ$
 $m\angle PXS = \underline{\hspace{2cm}}$
 $m\angle SXR = \underline{\hspace{2cm}}$

More Practice...

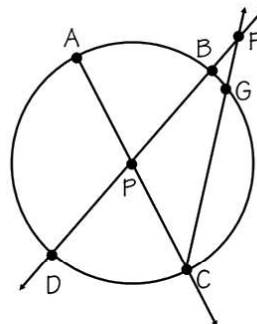
1. Find x .
-

2. Find x .
-

3. Find x .
-

4. Find \widehat{DE} .
-

5. In $\odot P$, $m\widehat{AB} = 68^\circ$ and $m\widehat{BG} = 18^\circ$. Find $m\angle ACF$.



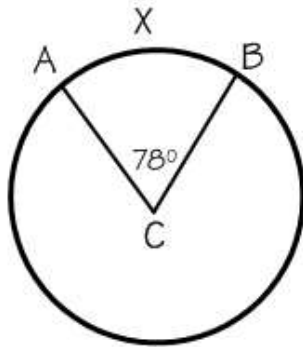
Geometry – DAY 7.6
Classwork: Circles

Name: _____

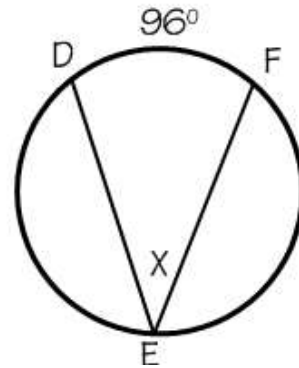
Date: _____

What do you know so far...
Find x for each of the following.

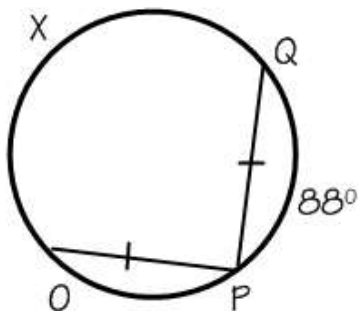
1. $x =$ _____



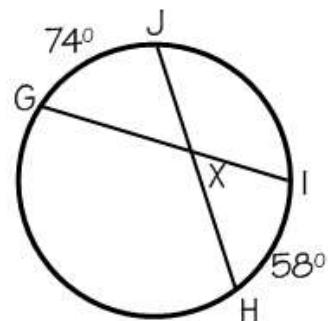
2. $x =$ _____



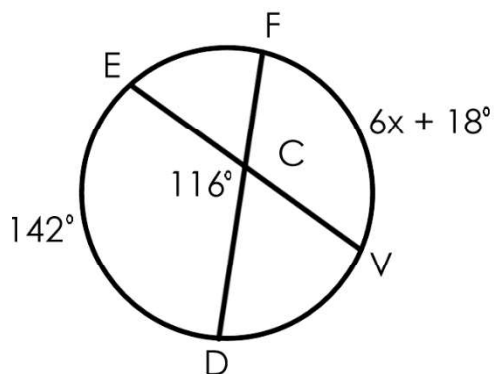
3. $x =$ _____



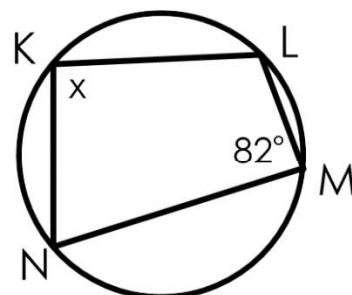
4. $x =$ _____



5. $x =$ _____



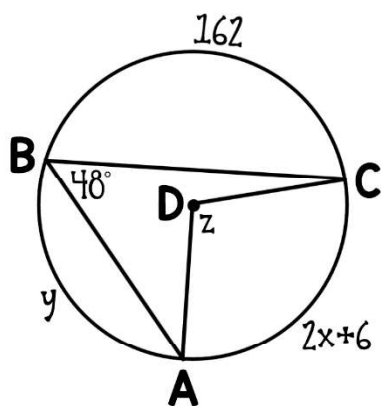
6. $x =$ _____



7. $x =$ _____

$y =$ _____

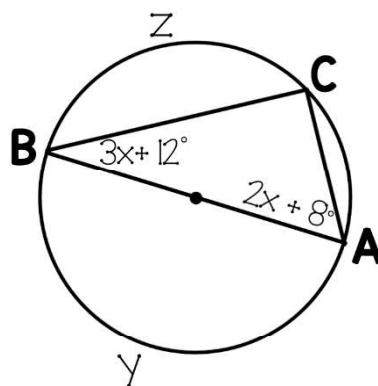
$z =$ _____



8. $x =$ _____

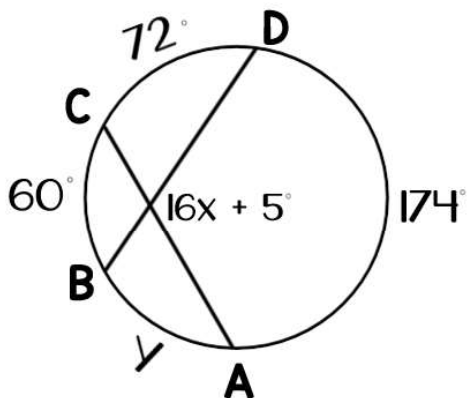
$y =$ _____

$z =$ _____



9. $x =$ _____

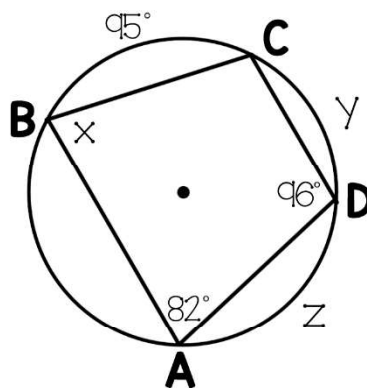
$y =$ _____



10. $x =$ _____

$y =$ _____

$z =$ _____



11. $a =$ _____

$b =$ _____

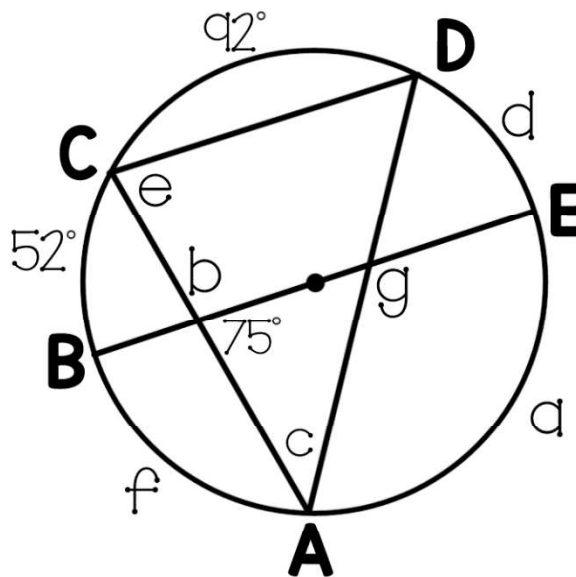
$c =$ _____

$d =$ _____

$e =$ _____

$f =$ _____

$g =$ _____



Geometry – DAY 7.7

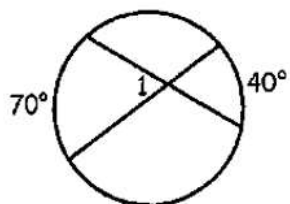
Tangents and Secants

Name: _____

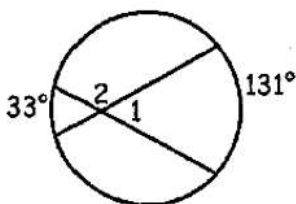
Date: _____

WARM-UP:

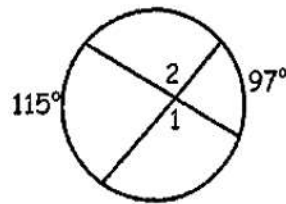
1. $m\angle 1 =$ _____



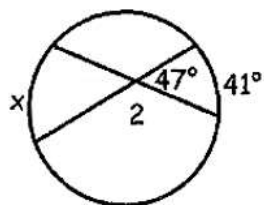
2. $m\angle 1 =$ _____; $m\angle 2 =$ _____



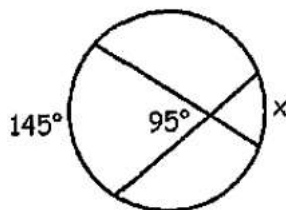
3. $m\angle 1 =$ _____; $m\angle 2 =$ _____



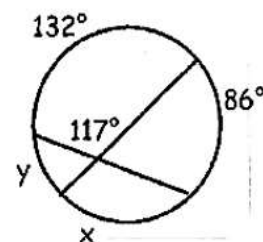
4. $m\angle 2 =$ _____; $x =$ _____



5. $x =$ _____



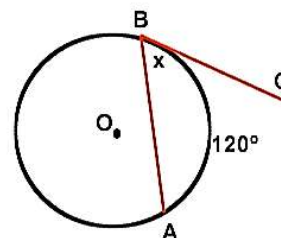
6. $x =$ _____; $y =$ _____



Tangent Chord Angle: An angle formed by an _____ and _____ has its vertex "on" the circle.

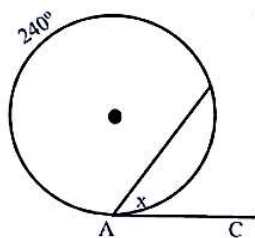
Tangent Chord Angle = _____

$m\angle ABC =$ _____

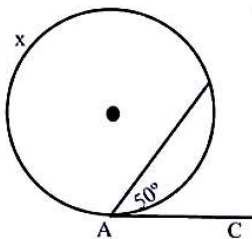


Examples:

1. $x =$ _____

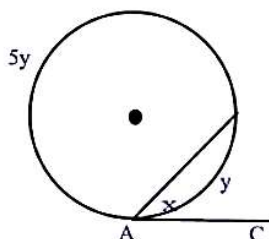


2. $x =$ _____



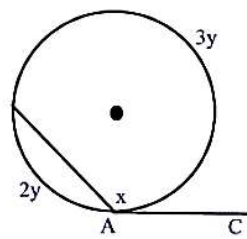
3. $y =$ _____

$x =$ _____



4. $y =$ _____

$x =$ _____



An Angle Formed Outside of a Circle is Constructed by the Intersection of:

"Two Tangents" or "Two Secants" or "a Tangent and a Secant."

The formulas for all THREE of these situations are the same: _____
(When subtracting, start with the larger arc.)

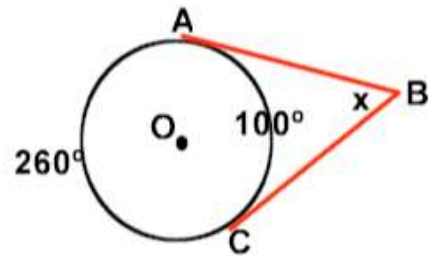
Two Tangents

$\angle ABC$ is formed by two _____ intersecting outside of circle O.

The *intercepted arcs* are _____ and _____.

These two arcs together comprise the entire circle.

$m\angle ABC =$ _____

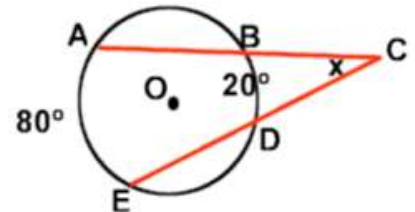


Two Secants

$\angle ACE$ is formed by two _____ intersecting outside of circle O.

The *intercepted arcs* are _____ and _____.

$m\angle ACE =$ _____

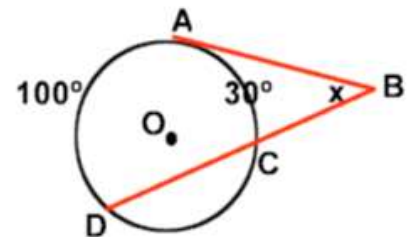


A Secant and A Tangent

$\angle ABD$ is formed by a _____ and a _____ intersecting outside of circle O.

The *intercepted arcs* are _____ and _____.

$m\angle ABD =$ _____



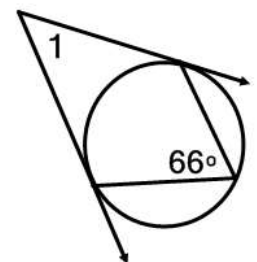
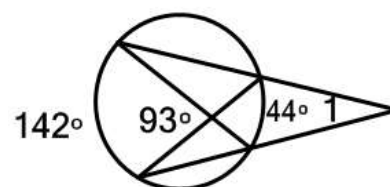
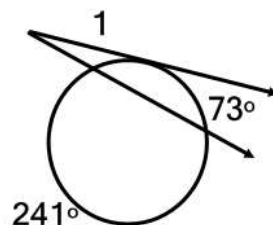
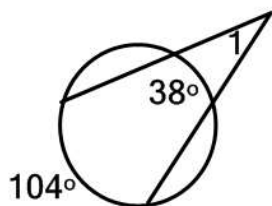
Examples:

1. $m\angle 1 =$ _____

2. $m\angle 1 =$ _____

3. $m\angle 1 =$ _____

4. $m\angle 1 =$ _____

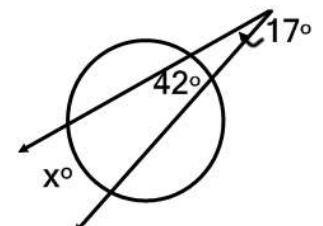
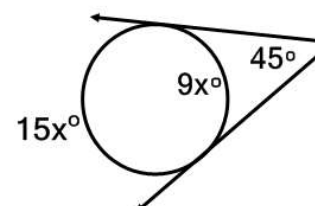
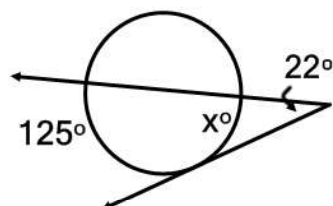
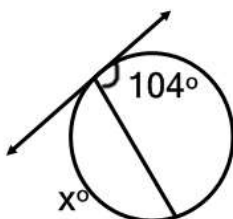


5. $x =$ _____

6. $x =$ _____

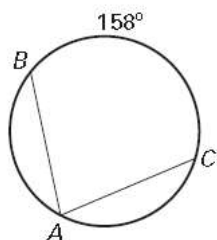
7. $x =$ _____

8. $x =$ _____

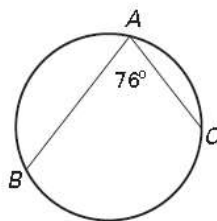


Find the indicated measures.

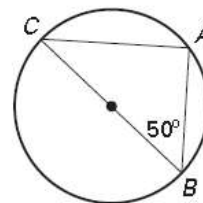
1. $m\angle A =$ _____



2. $m\angle B =$ _____

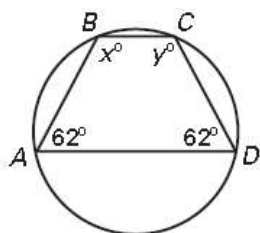


3. $m\angle C =$ _____



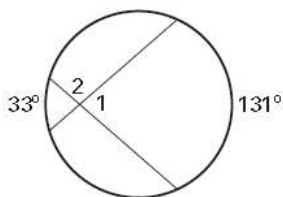
4. $x =$ _____

$y =$ _____

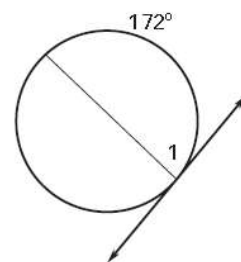


5. $m\angle 1 =$ _____

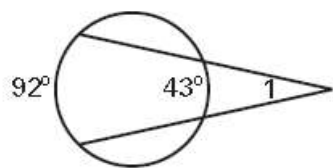
$m\angle 2 =$ _____



6. $m\angle 1 =$ _____

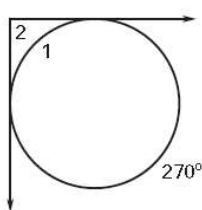


7. $m\angle 1 =$ _____

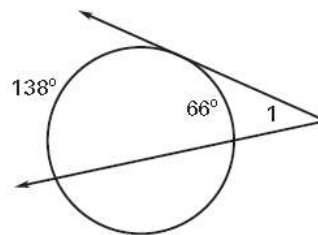


8. $1 =$ _____

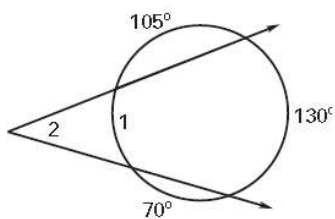
$m\angle 2 =$ _____



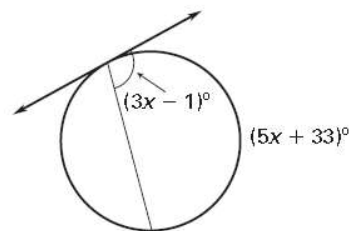
9. $m\angle 1 =$ _____



10. $1 =$ _____ $m\angle 2 =$ _____



11. $x =$ _____



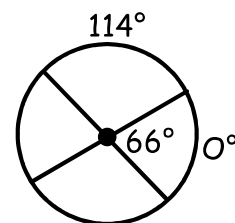
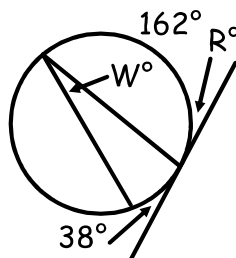
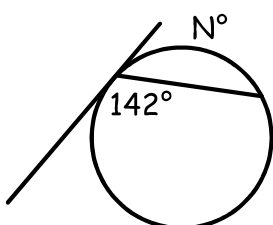
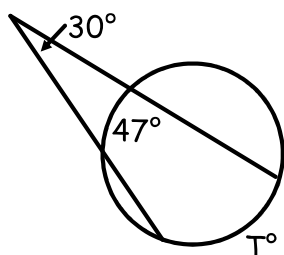
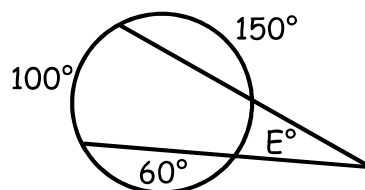
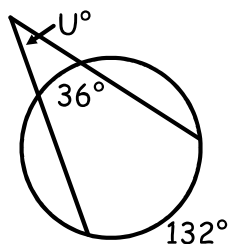
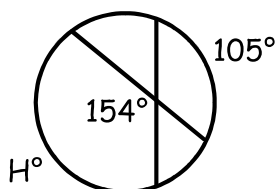
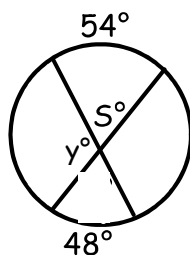
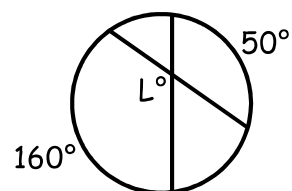
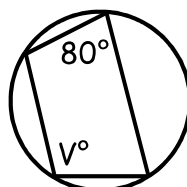
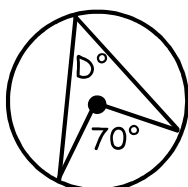
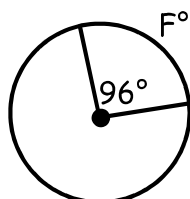
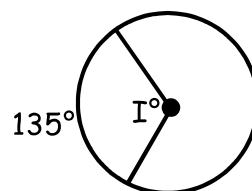
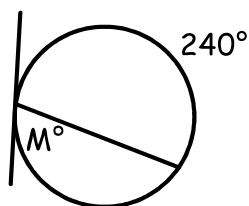
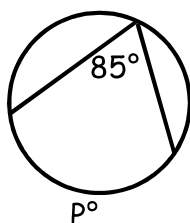
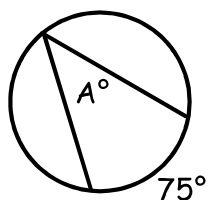
What did the Mama Lion say when she saw her cub chasing a hunter around a tree?

To find out, figure out the degree measure of each lettered angle and arc in the circles below. Then place the corresponding letter above each number.

203 66 19 60 37.5 76 129 107 135 60 25 51 203 37.5 100 25

135 107 66 105 35 129 66 48 76 66 107 107 66

170 105 37.5 129 19 135 107 203 129 66 48 81 96 66 66 35



Monster Circle Problem

Name: _____

\overline{AD} is tangent to $\odot H$ at point C

\overline{FK} is tangent to $\odot H$ at point G

\overline{CJ} is a diameter

$m\angle 2 = 89^\circ$

$\widehat{CB} = 23^\circ$

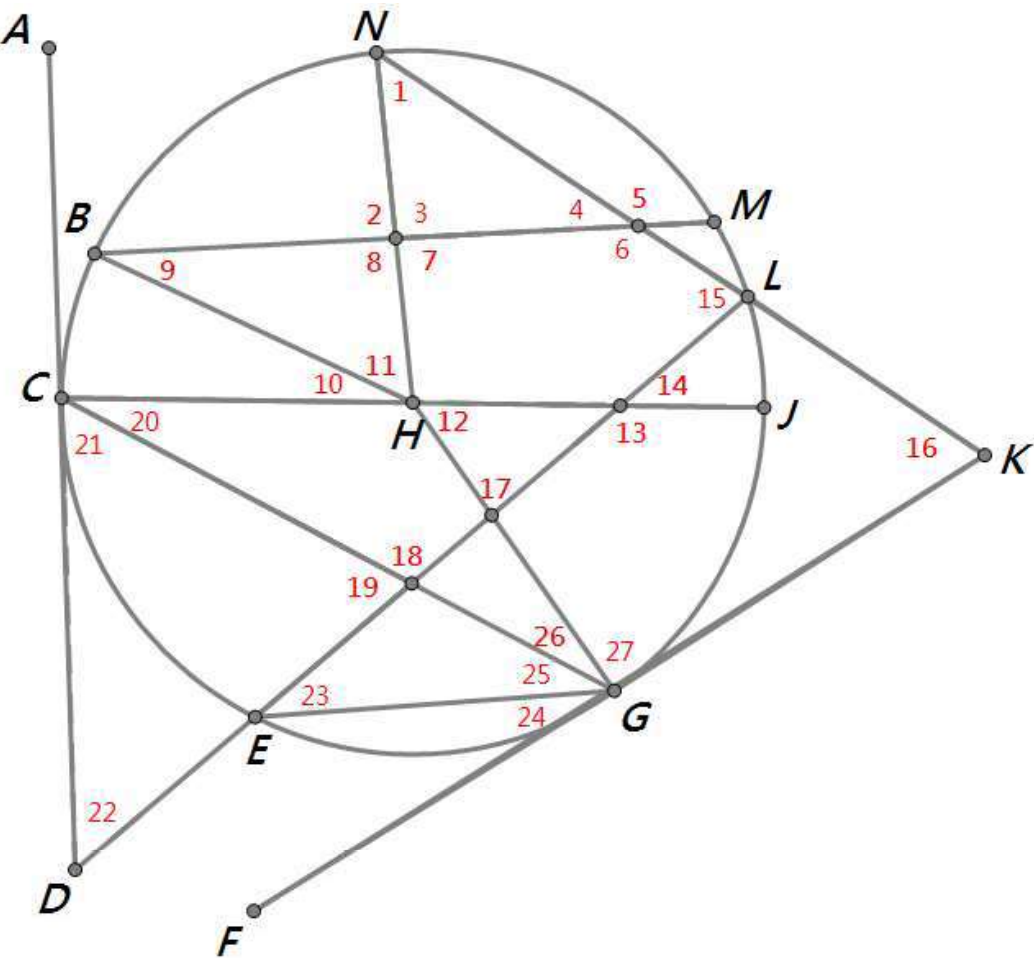
$\widehat{BN} = 62^\circ$

$\widehat{NM} = 64^\circ$

$\widehat{LJ} = 18^\circ$

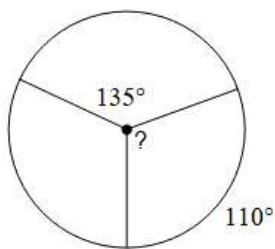
$\widehat{CE} = 63^\circ$

$\widehat{EG} = 57^\circ$

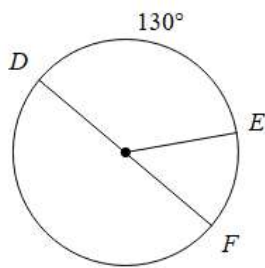


$\angle 1 =$		$\angle 9 =$		$\angle 17 =$		$\angle 25 =$	
$\angle 2 =$	89°	$\angle 10 =$		$\angle 18 =$		$\angle 26 =$	
$\angle 3 =$		$\angle 11 =$		$\angle 19 =$		$\angle 27 =$	
$\angle 4 =$		$\angle 12 =$		$\angle 20 =$			
$\angle 5 =$		$\angle 13 =$		$\angle 21 =$			
$\angle 6 =$		$\angle 14 =$		$\angle 22 =$			
$\angle 7 =$		$\angle 15 =$		$\angle 23 =$			
$\angle 8 =$		$\angle 16 =$		$\angle 24 =$			

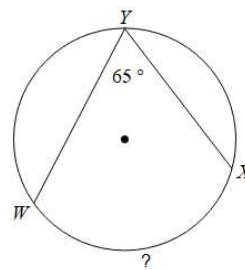
1. $? =$ _____



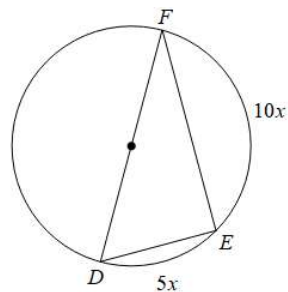
2. $m\text{ArcFDE} =$ _____



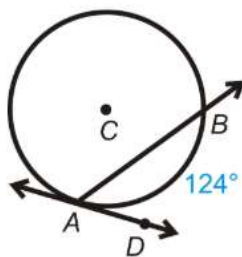
3. $? =$ _____



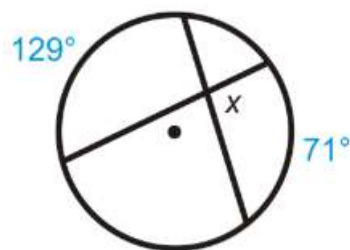
4. $x =$ _____



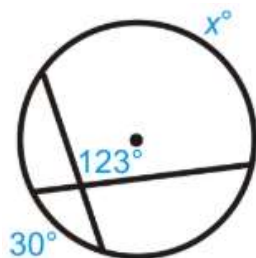
5. Find $m\angle BAD =$ _____



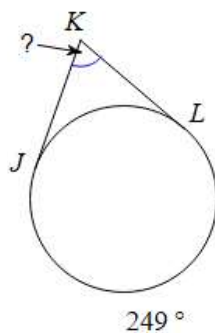
6. $x =$ _____



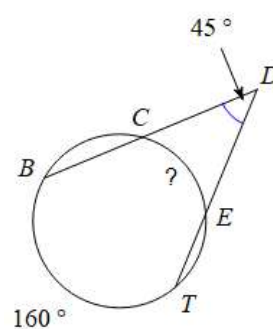
7. $x =$ _____



8. $? =$ _____



9. $? =$ _____

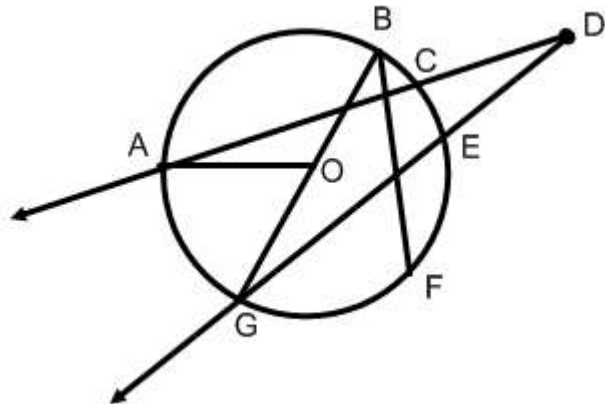


Geometry – DAY 7.9
Review for Test: Circle Arcs and Angle Measures

Name _____
 Date _____

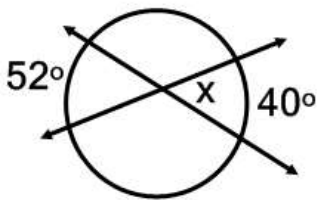
Use the figure at the right to name the indicated parts of $\odot O$.

1. AB
2. BEG
3. \overline{BF}
4. \overrightarrow{DA}
5. $\angle AOG$
6. \overline{OA}
7. \overline{BG}
8. $\angle GBF$
9. BAF

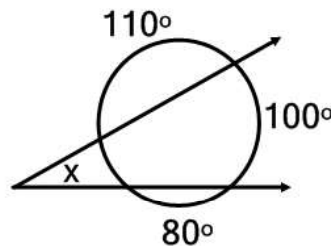


For questions 10 – 12, solve for x .

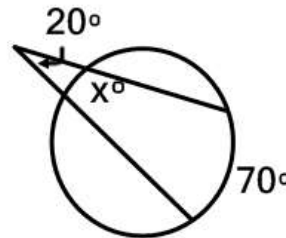
10. $x =$ _____



11. $x =$ _____

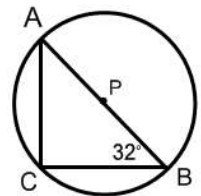


12. $x =$ _____



13. In $\odot P$ find $m\angle CAB$.

$m\angle CAB =$ _____



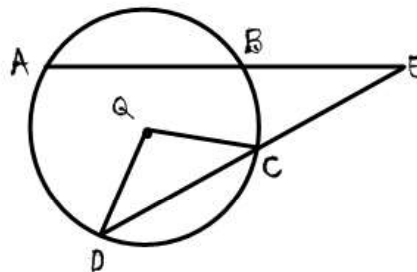
In $\odot Q$, $m\angle CQD = 120^\circ$, $m\angle BEC = 25^\circ$, and $m\angle BC = 30^\circ$. Find the following:

14. $m\angle DC =$ _____

15. $m\angle AD =$ _____

16. $m\angle AB =$ _____

17. $m\angle QDC =$ _____



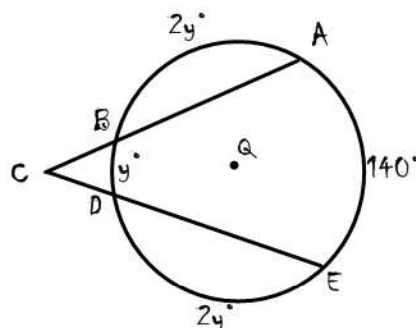
In $\odot Q$, find the following:

18. $m\angle BD =$ _____

19. $m\angle AB =$ _____

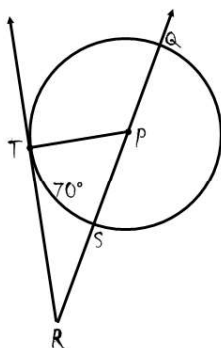
20. $m\angle DE =$ _____

21. $m\angle ACE =$ _____



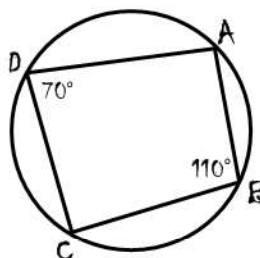
22. In $\odot P$, \overline{SQ} is the diameter.

$m\angle R = \underline{\hspace{2cm}}$



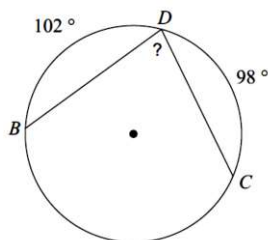
23. If the measure of arc $DAB = 135^\circ$, find the $m\angle DAB$.

$m\angle DAB = \underline{\hspace{2cm}}$



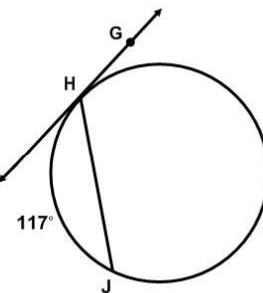
24. Find the inscribed angle.

$m\angle BDC = \underline{\hspace{2cm}}$



25. Find the $m\angle GHJ$.

$m\angle GHJ = \underline{\hspace{2cm}}$



Use the figure at the right to find each measure. \overline{EF} is tangent to $\odot G$, $m\angle ADC = 210^\circ$, $m\angle AD = 126^\circ$, and $m\angle DHA = 112^\circ$.

26. $m\angle DAC = \underline{\hspace{2cm}}$

27. $m\angle CAF = \underline{\hspace{2cm}}$

28. $m\angle DC = \underline{\hspace{2cm}}$

29. $m\angle AHD = \underline{\hspace{2cm}}$

30. $m\angle BHA = \underline{\hspace{2cm}}$

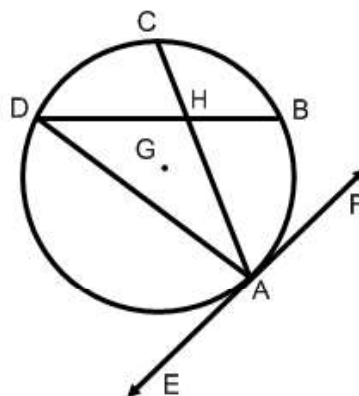
31. $m\angle CB = \underline{\hspace{2cm}}$

32. $m\angle AB = \underline{\hspace{2cm}}$

33. $m\angle DAE = \underline{\hspace{2cm}}$

34. $m\angle BDA = \underline{\hspace{2cm}}$

35. $m\angle ABD = \underline{\hspace{2cm}}$



Solve for x.

