

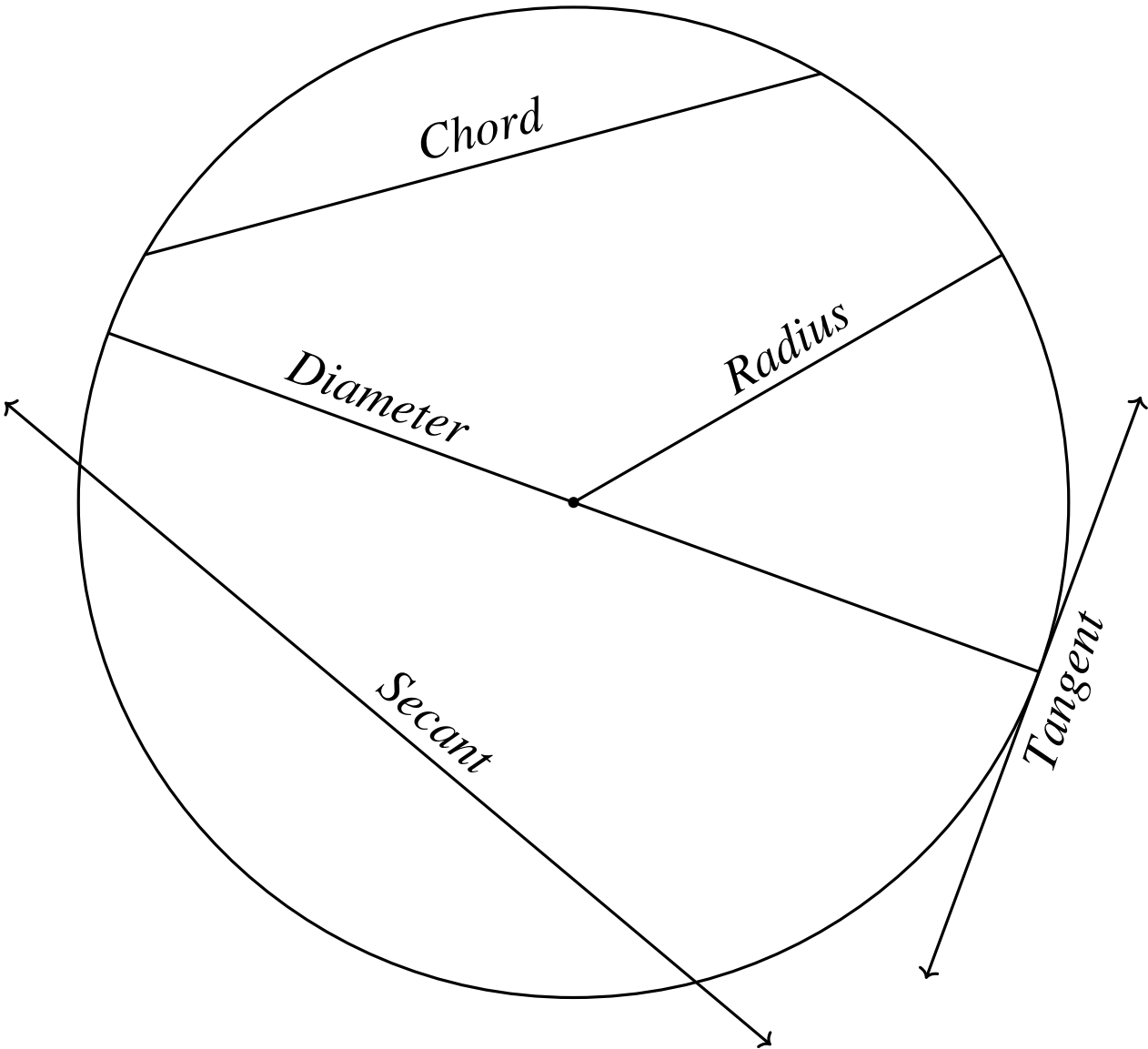
ONLINE WORKSHEET PACKAGE

GEOMETRY

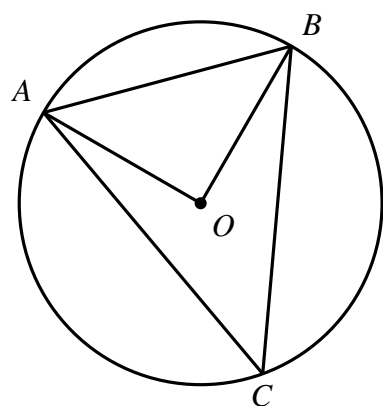
CIRCLE ANGLE AND LINE SEGMENTS

DR AHN MATH & LEARNING CENTER

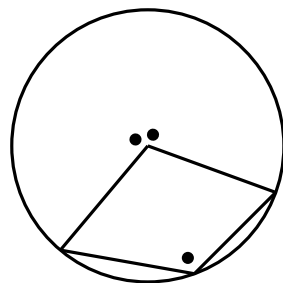
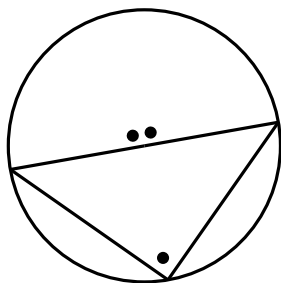
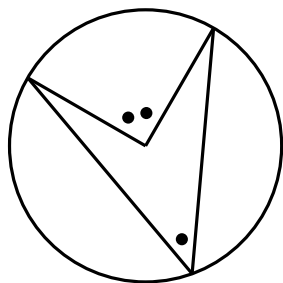
Circle Lines



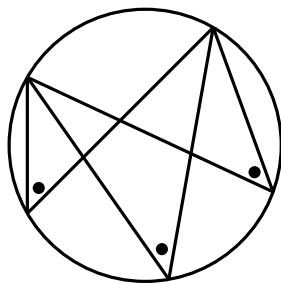
Circle Geometry



Arc Length	$\widehat{AB}$
Chord	$\overline{AB}$
Central Angle (Arc Angle)	$\angle AOB$
Inscribed Angle	$\angle ACB$

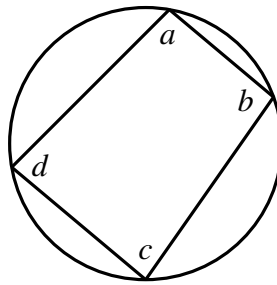
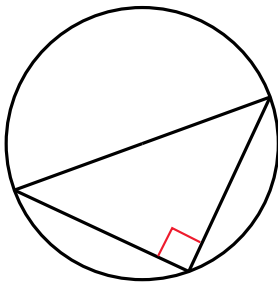


Central Angle = 2 × Inscribed Angle



All inscribed angles for an arc are the same

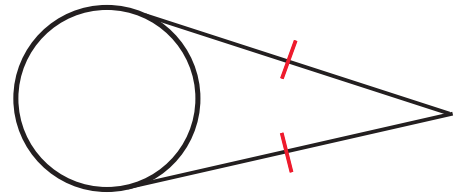
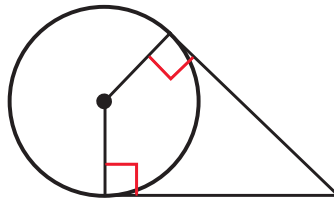
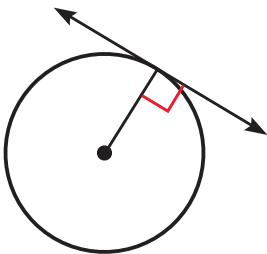
. Inscribed Polygons



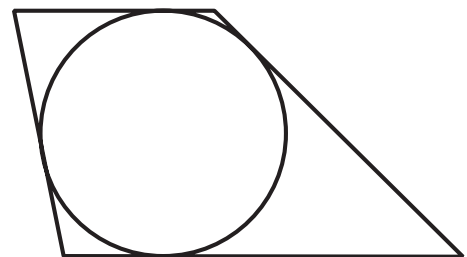
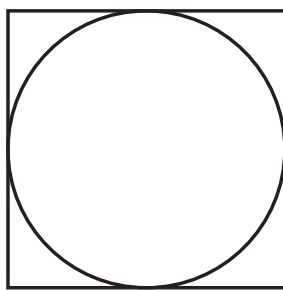
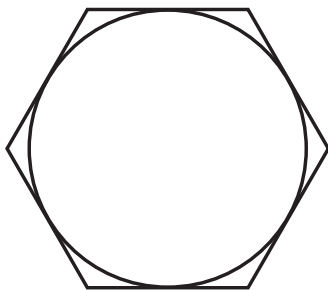
$$a + c = 180^\circ$$

$$b + d = 180^\circ$$

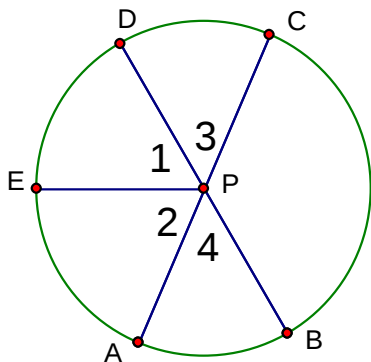
. Tangent Lines



. Circumscribed Polygons



In circle P, $m\angle 1 = m\angle 2$, $m\angle 1 = 9x + 5$, $m\angle 2 = 4x + 35$, and $\overline{BD}$ and $\overline{AC}$ are diameters. Find each value or measure.



1. x

7. $m\widehat{EB}$

2. $m\widehat{AE}$

8. $m\angle CPB$

3. $m\widehat{ED}$

9. $m\widehat{CB}$

4. $m\angle 3$

10. $m\widehat{CEB}$

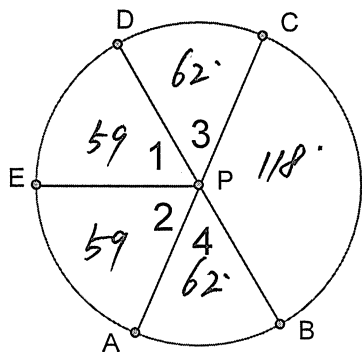
5. $m\widehat{AB}$

11. $m\widehat{DC}$

6. $m\widehat{EC}$

12. $m\widehat{CEA}$

In circle P, $m\angle 1 = m\angle 2$, $m\angle 1 = 9x + 5$, $m\angle 2 = 4x + 35$, and $\overline{BD}$ and $\overline{AC}$ are diameters. Find each value or measure.



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

$$5x = 30 \rightarrow x = 6$$

$$9 \cdot 6 + 5 = 59$$

$$180 - 118 = 62$$

1. x 6

7. $m\widehat{EB}$ 121°

2. $m\widehat{AE}$ 59°

8. $m\angle CPB$ 118°

3. $m\widehat{ED}$ 59°

9. $m\widehat{CB}$ 118°

4. $m\angle 3$ 62°

10. $m\widehat{CEB}$ 242°

5. $m\widehat{AB}$ 62°

11. $m\widehat{DC}$ 62°

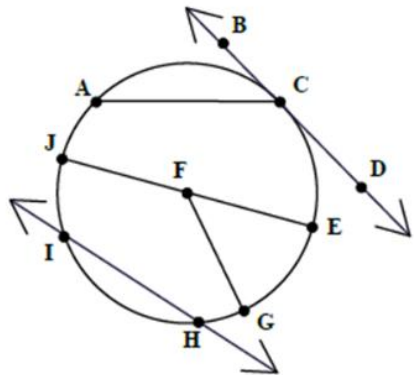
6. $m\widehat{EC}$ 121°

12. $m\widehat{CEA}$ 180°

WS A-Circle Vocabulary Practice

F is the center of the circle.

- (a) $\overline{FG}$ is called a _____
- (b) $\widehat{EG}$ is called a _____
- (c) $\overline{AC}$ is called a _____
- (d) $\overline{EJ}$ is called a _____
- (e) $\overleftrightarrow{DB}$ is called a _____
- (f) $\overleftrightarrow{HI}$ is called a _____



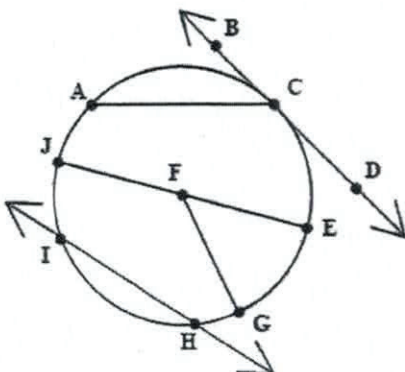
- (g) Point C is called a _____
- (h) $\angle EFG$ is called a _____
- (i) $\widehat{EA}$ is called a _____
- (j) $\widehat{CEJ}$ is called a _____

Match the word to its picture.

Word Bank: Chord Center Central Angle Circumference Concentric Circles Diameter Inscribed Angle
Major Arc Minor Arc Radius Secant Line Semi-circle Tangent Circles Tangent line

WS A-Circle Vocabulary Practice

F is the center of the circle.

(a) $\overline{FG}$ is called a radius(b) $\widehat{EG}$ is called a minor arc(c) $\overline{AC}$ is called a chord(d) $\overline{EJ}$ is called a diameter(e) $\overleftrightarrow{DB}$ is called a tangent(f) $\overleftrightarrow{HI}$ is called a Secant

(g) Point C is called a

point of tangency(h) $\angle EFG$ is called acentral angle(i) $\widehat{EA}$ is called aSemi-circle(j) $\widehat{CEJ}$ is called amajor arc

Match the word to its picture.

Word Bank: Chord Center Central Angle Circumference Concentric Circles Diameter Inscribed Angle
Major Arc Minor Arc Radius Secant Line Semi-circle Tangent Circles Tangent line

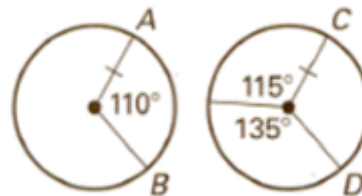
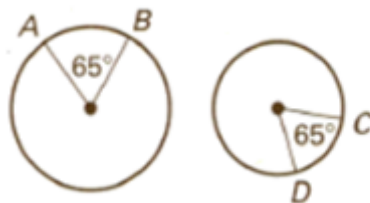
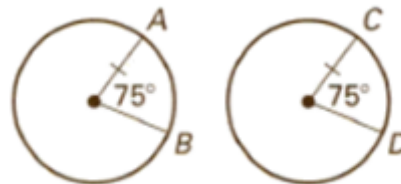
 <u>Center</u>	 <u>Radius</u>	 <u>diameter</u>	 <u>chord</u>
 <u>Secant</u>	 <u>tangent</u>	 <u>minor arc</u>	 <u>Semi-circle</u>
 <u>major arc</u>	 <u>central angle</u>	 <u>inscribed angle</u>	 <u>concentric circles</u>

Date _____ Period _____

-

-

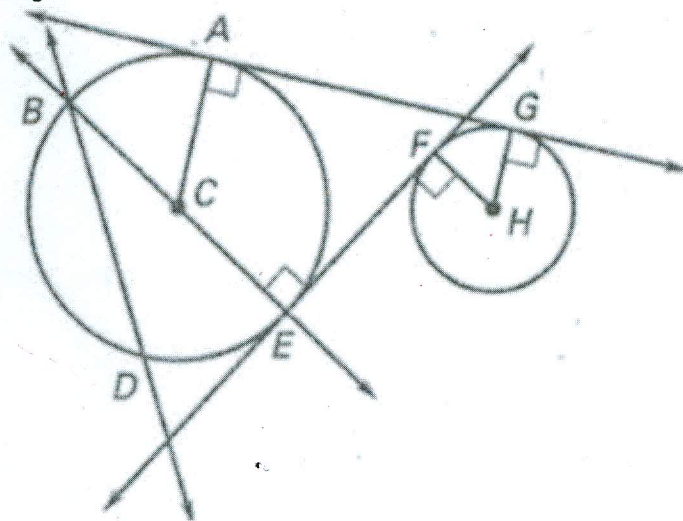
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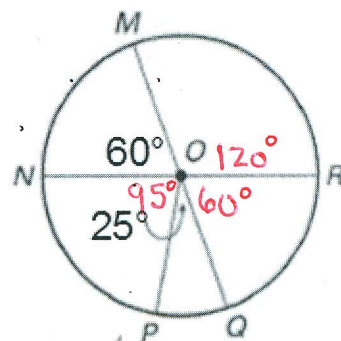
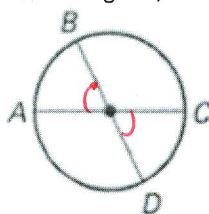
Central Angles and Arcs WS

Date _____ Period _____

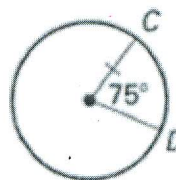
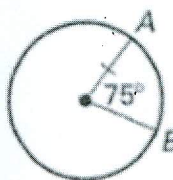
1. Use the diagram below to give an example of each of the following.

a. Center C or Hb. Chord (not a diameter) BDc. Diameter BEd. Radius CA, CB, CEe. Point of Tangency E, A, G, Ff. Common External Tangent AGg. Common Internal Tangent EFh. Secant BDi. Minor Arc AB, AE, FG, DEj. Major Arc ABD, ABEk. Semicircle BAE, LDB

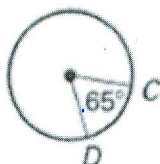
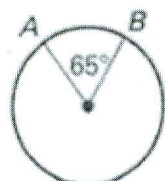
2. In circle O, MQ and NR are diameters. Find the indicated measures.

a. $m\widehat{MN}$ 60° f. $m\widehat{NQ}$ 120° b. $m\widehat{NQR}$ 180° g. $m\widehat{MRP}$ 205° c. $m\widehat{QR}$ 60° h. $m\widehat{MR}$ 120° d. $m\widehat{QMR}$ 300° i. $m\widehat{PQ}$ 25° e. $m\widehat{PRN}$ 265° j. $m\widehat{MQN}$ 300° 3. In each diagram, determine if $\widehat{AB} \cong \widehat{CD}$. Explain your reasoning.

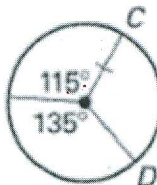
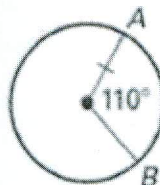
yes $\cong$ $\angle$'s
have $\cong$ arcs
in the same
circle.



yes in $\cong$
circles the
 $\cong$ central $\angle$'s
will have $\cong$ arcs



No the circles
are NOT $\cong$.



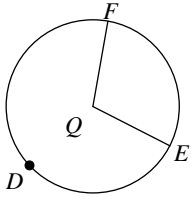
yes in $\cong$
circles $\cong$
central $\angle$'s
have $\cong$ arcs.

Arcs and Central Angles

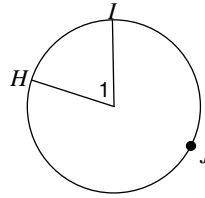
Date _____ Period _____

Name the arc made by the given angle.

1) $\angle FQE$

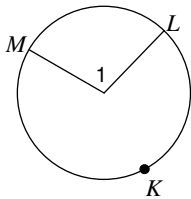


2) $\angle I$

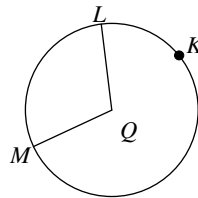


Name the central angle of the given arc.

3) $\widehat{ML}$

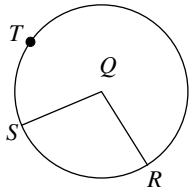


4) $\widehat{ML}$

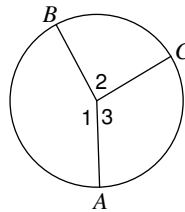


If an angle is given, name the arc it makes. If an arc is given, name its central angle.

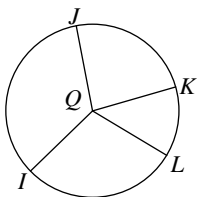
5) $\widehat{RS}$



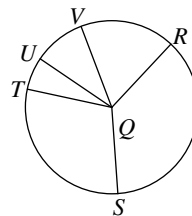
6) Major arc for $\angle I$



7) $\angle KQL$

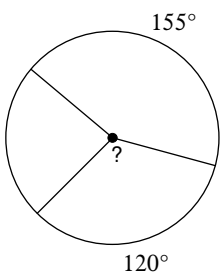


8) $\widehat{SVT}$

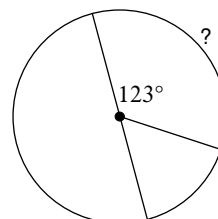


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

9)



10)

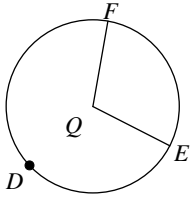


Arcs and Central Angles

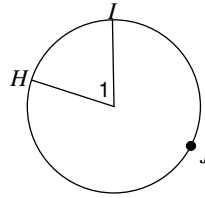
Date _____ Period _____

Name the arc made by the given angle.

1) $\angle FQE$ $\widehat{FE}$

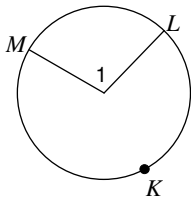


2) $\angle I$ $\widehat{HI}$

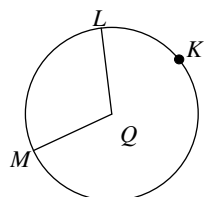


Name the central angle of the given arc.

3) $\widehat{ML}$ $\angle I$

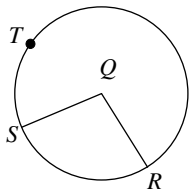


4) $\widehat{ML}$ $\angle MQL$

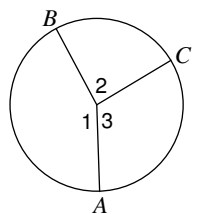


If an angle is given, name the arc it makes. If an arc is given, name its central angle.

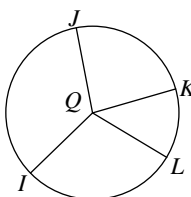
5) $\widehat{RS}$ $\angle RQS$



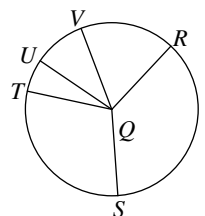
6) Major arc for $\angle I$ $\widehat{ACB}$



7) $\angle KQL$ $\widehat{KL}$

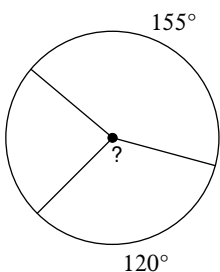


8) $\widehat{SVT}$ $\angle SQT$

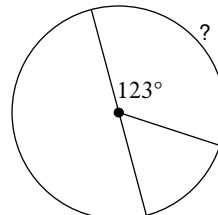


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

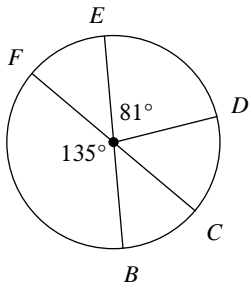
9) 120°



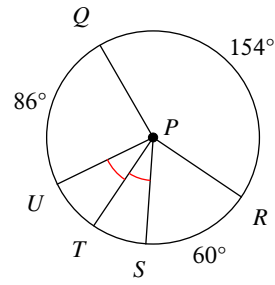
10) 123°



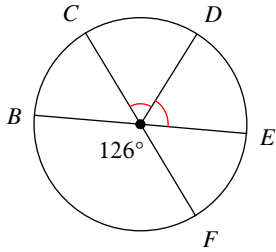
11) $m\widehat{CFD}$



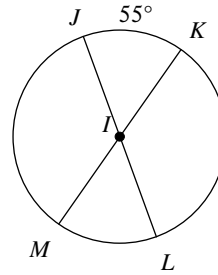
12) $m\angle SPQ$



13) $m\widehat{EFC}$

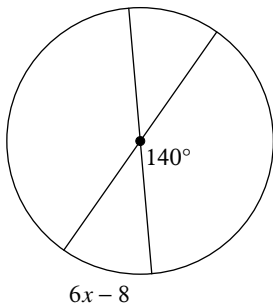


14) $m\angle MIJ$

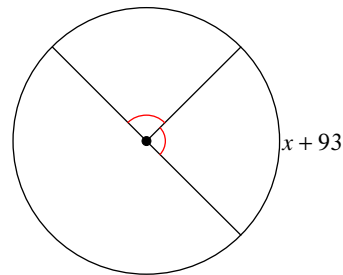


Solve for x . Assume that lines which appear to be diameters are actual diameters.

15)

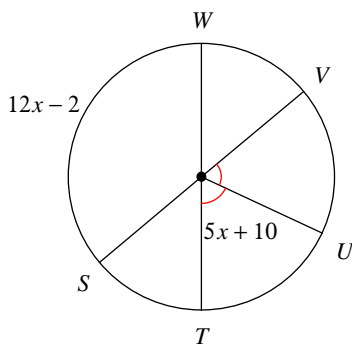


16)

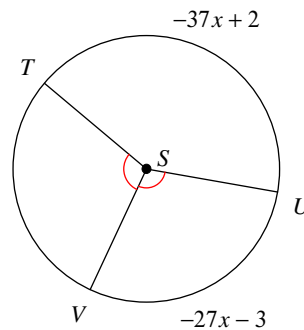


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

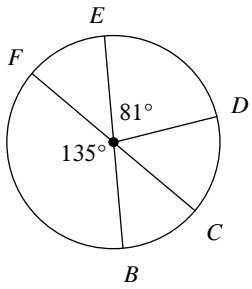
17) $m\widehat{WV}$



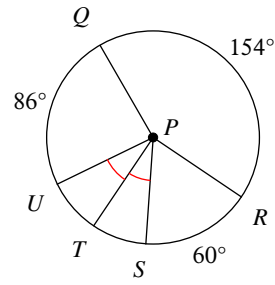
18) $m\angle VST$



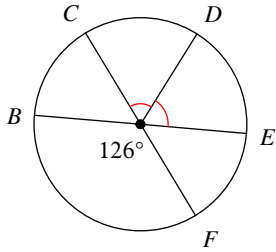
11) $m\widehat{CFD}$ 306°



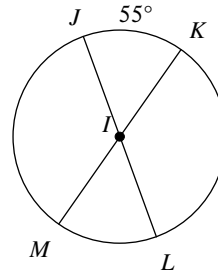
12) $m\angle SPQ$ 146°



13) $m\widehat{EFC}$ 234°

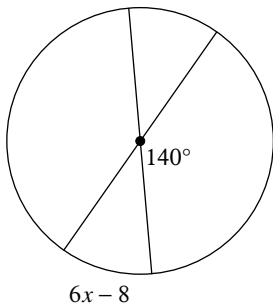


14) $m\angle MIJ$ 125°

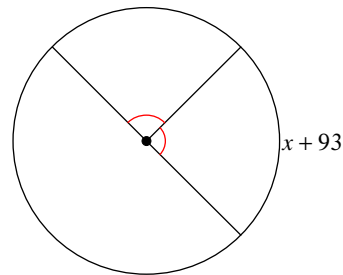


Solve for x . Assume that lines which appear to be diameters are actual diameters.

15) 8

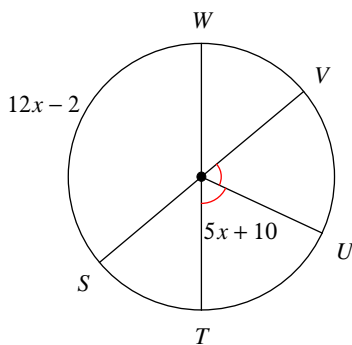


16) -3

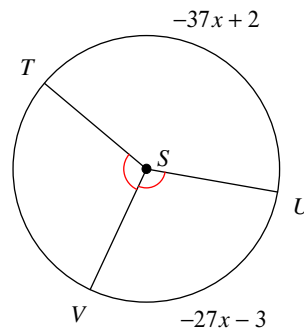


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

17) $m\widehat{WV}$ 50°

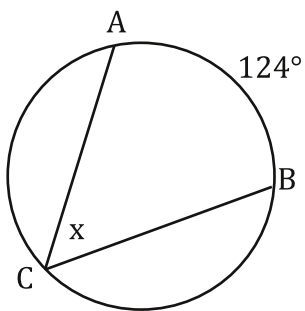


18) $m\angle VST$ 105°

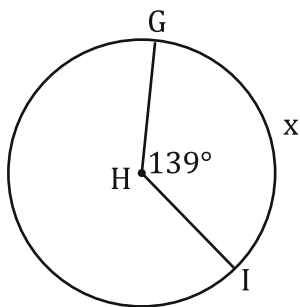


For these... find the value of x . Show all your work...

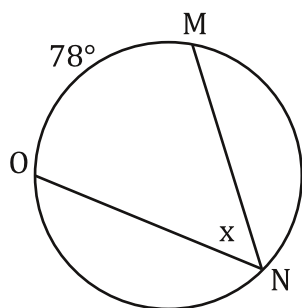
1.



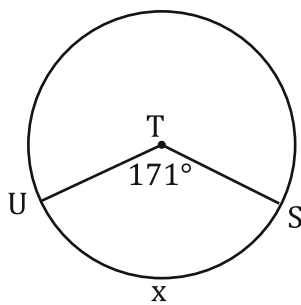
3.



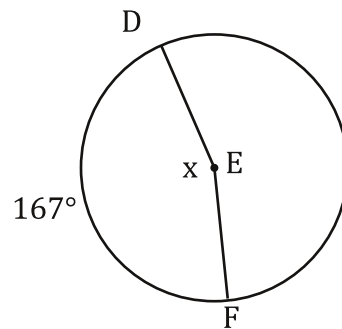
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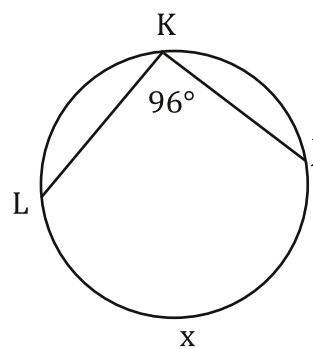
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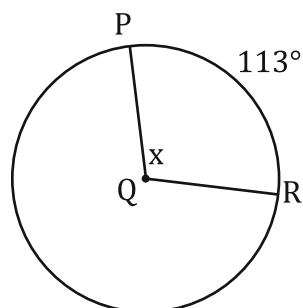
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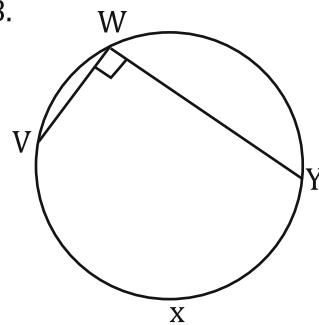
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6.

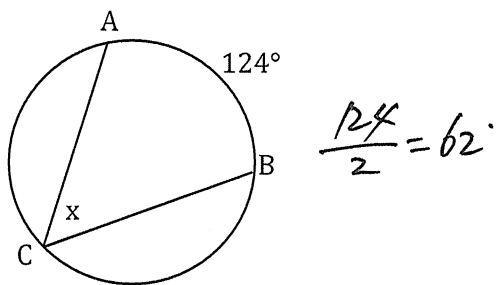


8.

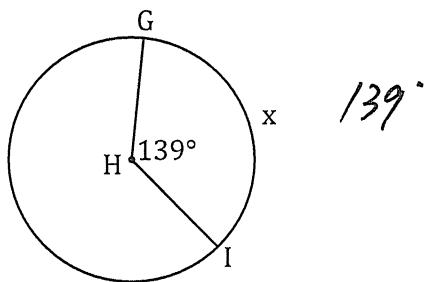


For these... find the value of x. Show all your work...

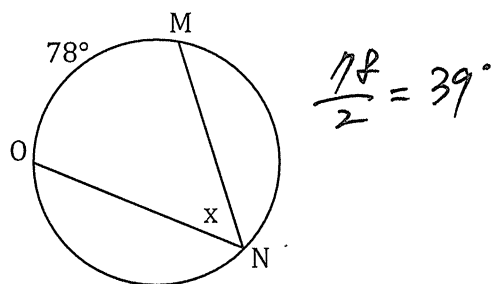
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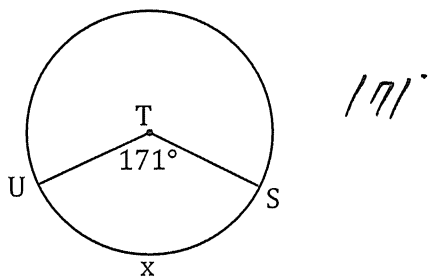
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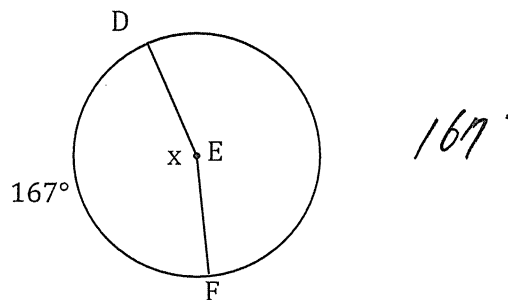
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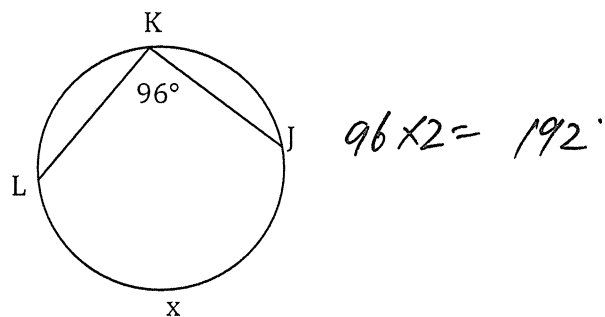
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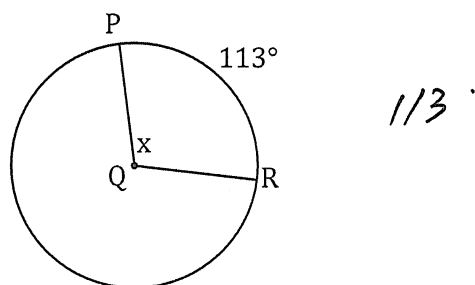
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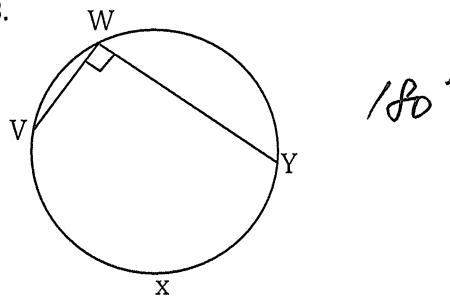
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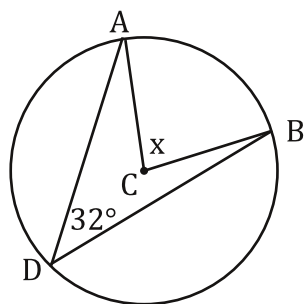
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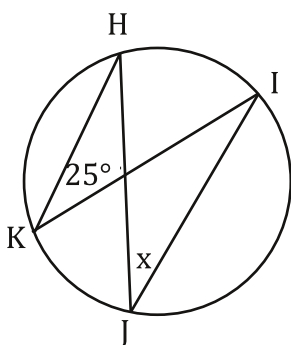
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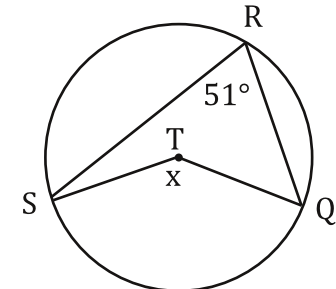
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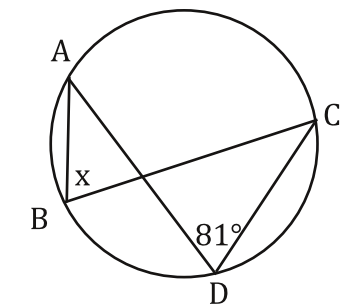
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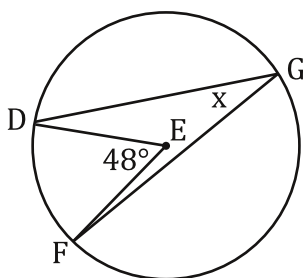
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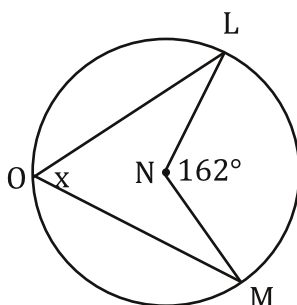
15.



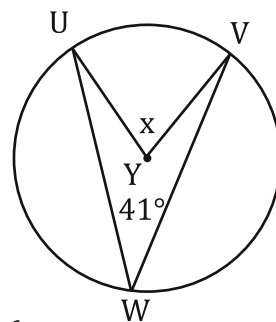
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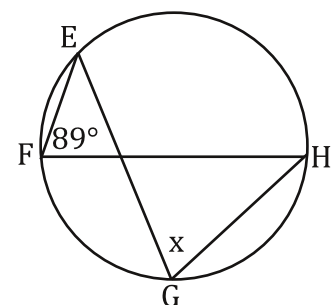
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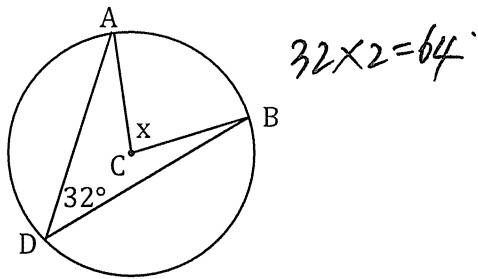
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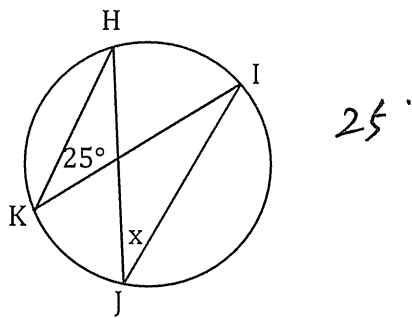
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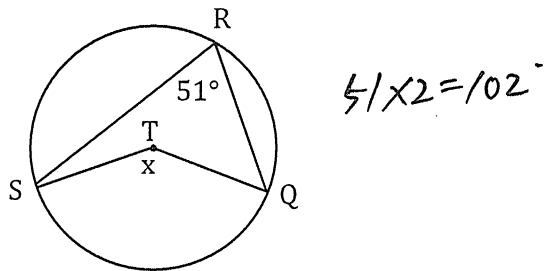
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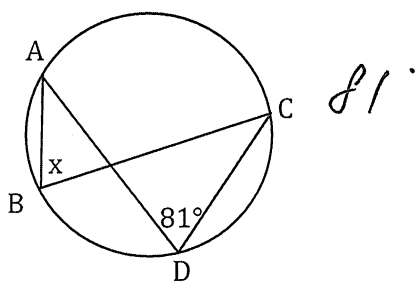
11.



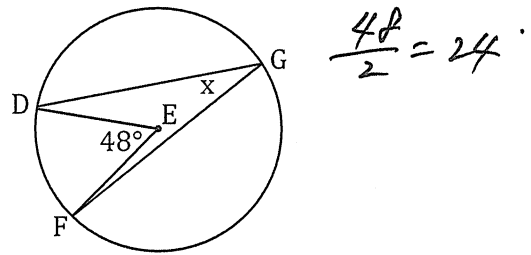
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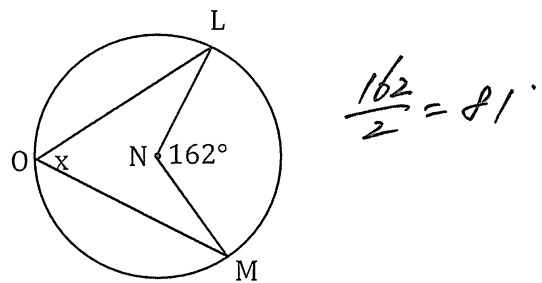
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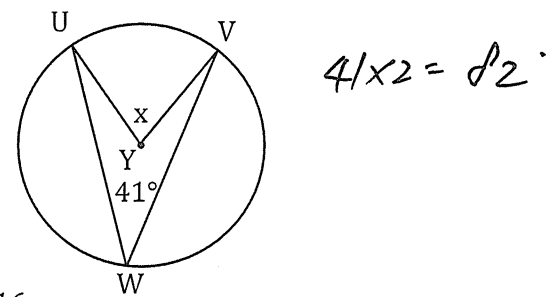
10.



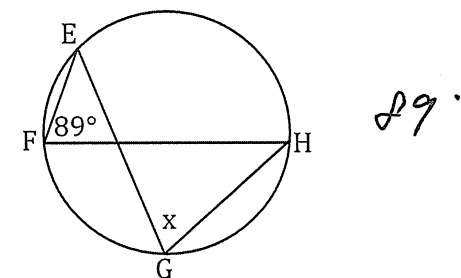
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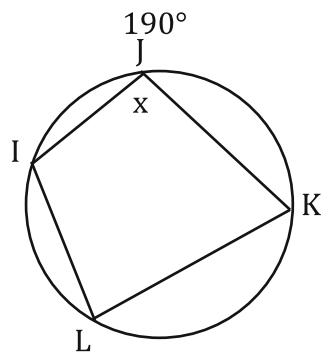
14.



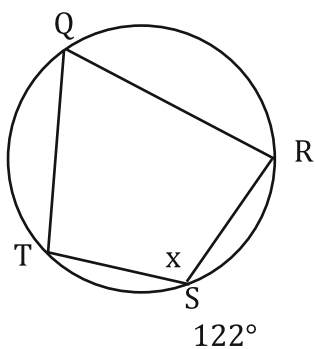
16.



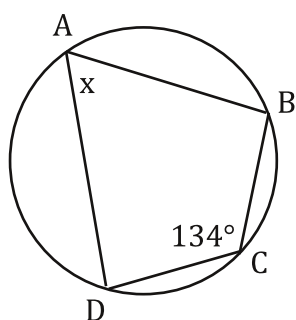
17. $m\widehat{IJK} = 190^\circ$



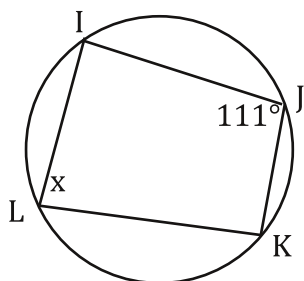
19. $m\widehat{RST} = 122^\circ$



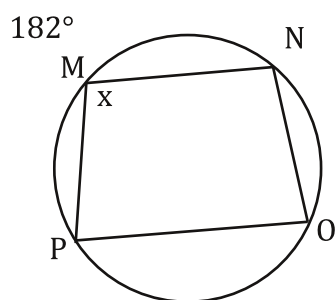
21.



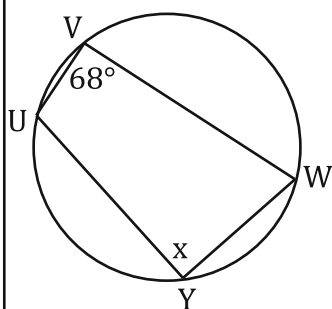
23.



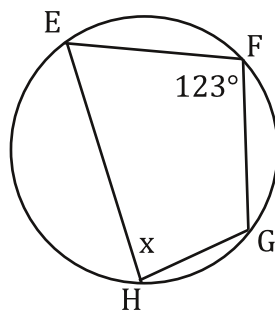
18. $m\widehat{PMN} = 182^\circ$



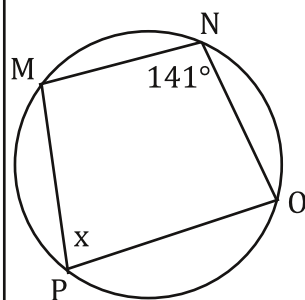
20. First find $m\widehat{UYW}$.



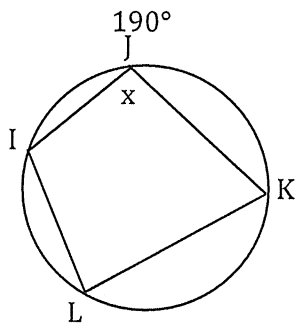
22.



24.



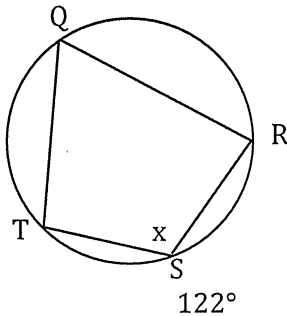
17. $m\widehat{IJK} = 190^\circ$



$$\frac{190}{2} = 95^\circ$$

$$180 - 95 = 85^\circ$$

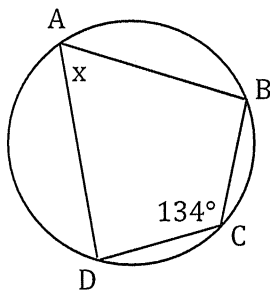
19. $m\widehat{RST} = 122^\circ$



$$\frac{122}{2} = 61^\circ$$

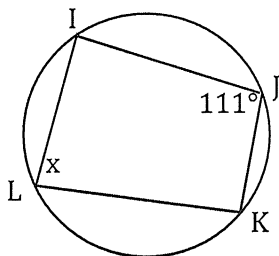
$$180 - 61 = 119^\circ$$

21.



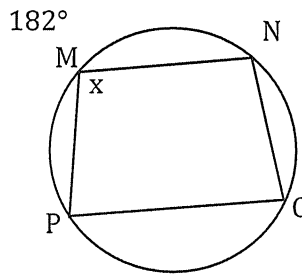
$$180 - 134 = 46^\circ$$

23.



$$180 - 111 = 69^\circ$$

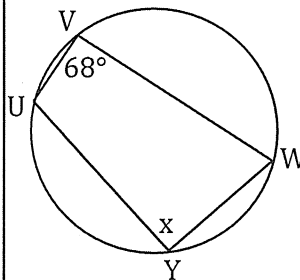
18. $m\widehat{PMN} = 182^\circ$



$$\frac{182}{2} = 91^\circ$$

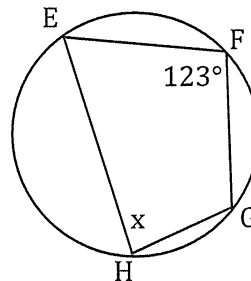
$$180 - 91 = 89^\circ$$

20. First find $m\widehat{UYW}$.



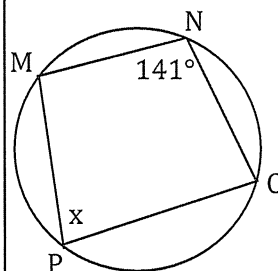
$$180 - 68 = 112^\circ$$

22.



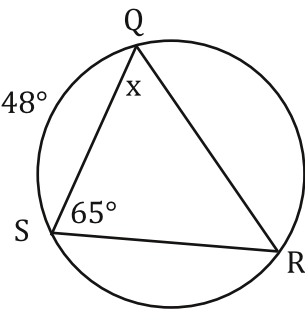
$$180 - 123 = 57^\circ$$

24.

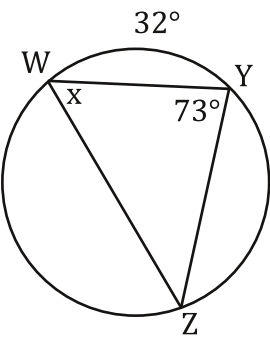


$$180 - 141 = 39^\circ$$

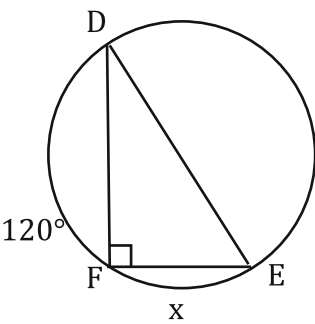
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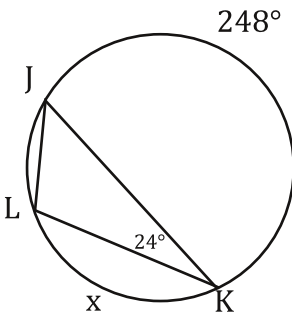
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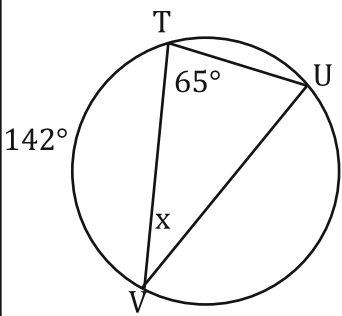
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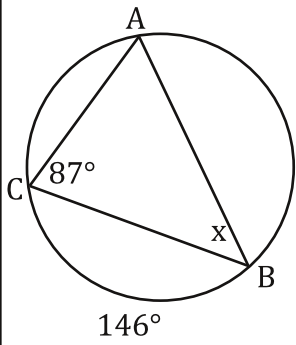
31.



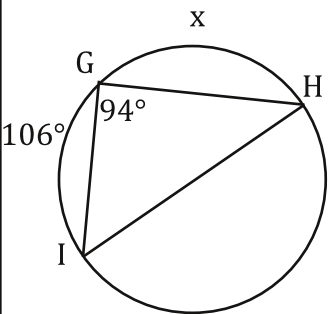
26.



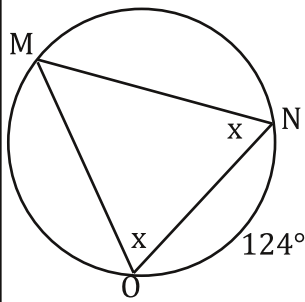
28.



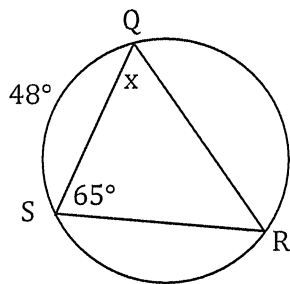
30.



32.



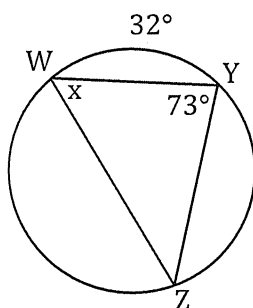
25.



$$\frac{48}{2} = 24$$

$$180 - 65 - 24 = 91$$

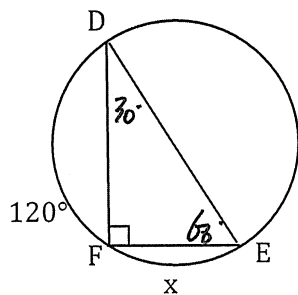
27.



$$\frac{32}{2} = 16$$

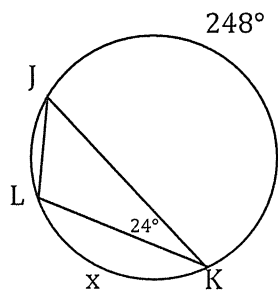
$$180 - 73 - 16 = 91$$

29.



$$30 \times 2 = 60$$

31.

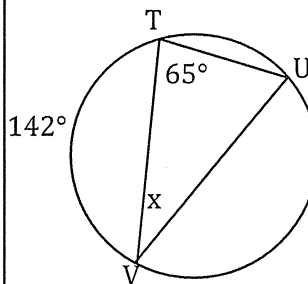


$$\frac{248}{2} = 124$$

$$180 - 124 - 24 = 32$$

$$32 \times 2 = 64$$

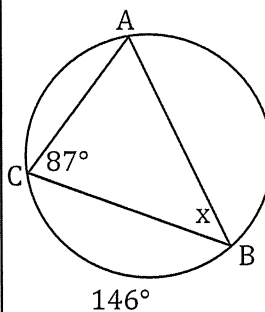
26.



$$\frac{142}{2} = 71$$

$$180 - 65 - 71 = 44$$

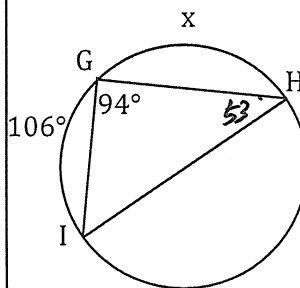
28.



$$\frac{146}{2} = 73$$

$$180 - 87 - 73 = 20$$

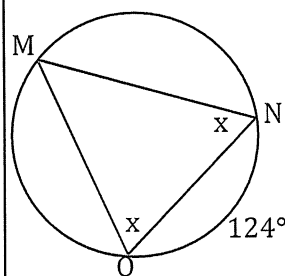
30.



$$180 - 94 - 53 = 33$$

$$33 \times 2 = 66$$

32.

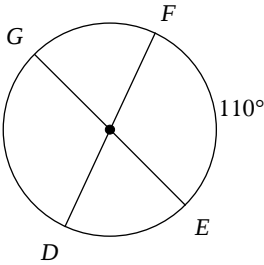


$$\frac{124}{2} = 62$$

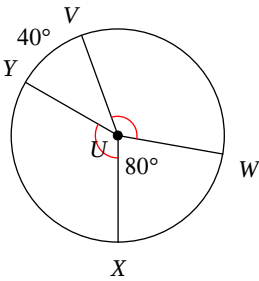
$$\frac{180 - 62}{2} = 59$$

Find the measure of the arc or angle indicated.

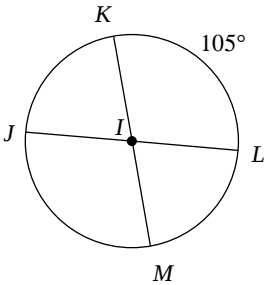
1) $m\widehat{EDF}$



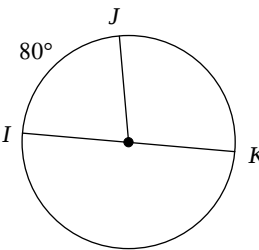
2) $m\angle XUV$



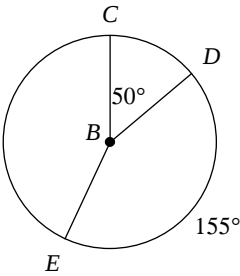
3) $m\angle JIK$



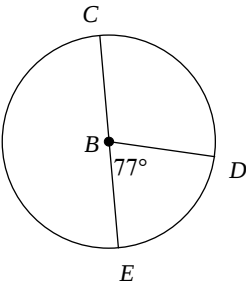
4) $m\widehat{JKI}$



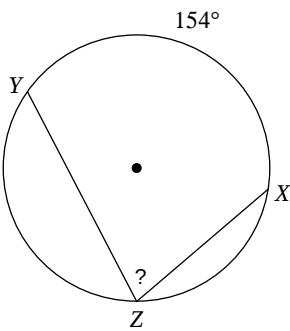
5) $m\angle EBC$



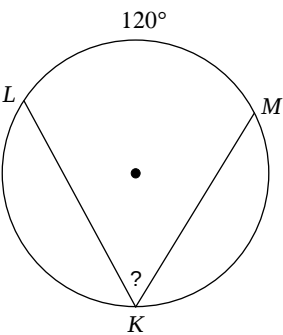
6) $m\angle CBD$



7)

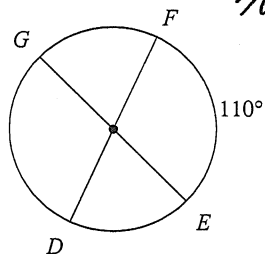


8)



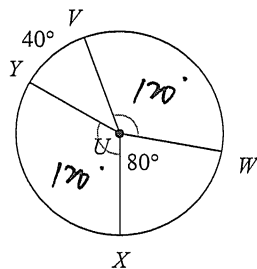
Find the measure of the arc or angle indicated.

1) $m\widehat{EDF}$



$$360 - 110 = 250$$

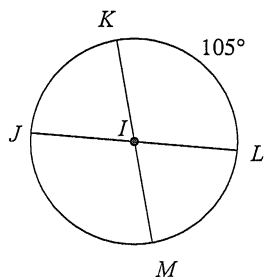
2) $m\angle XUV$



$$\frac{360 - 120}{2} = 120$$

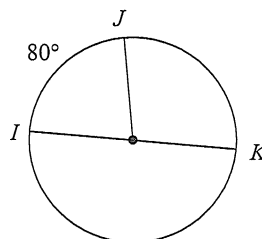
$$120 + 40 = 160$$

3) $m\angle JIK$



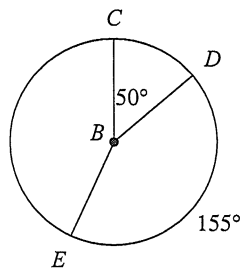
$$180 - 105 = 75$$

4) $m\widehat{JKI}$



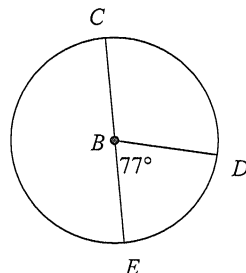
$$360 - 80 = 280$$

5) $m\angle EBC$



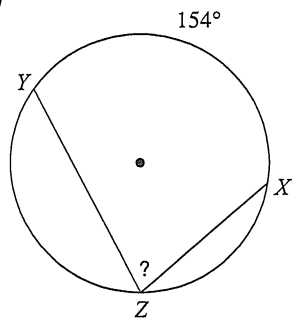
$$360 - 50 - 155 = 155$$

6) $m\angle CBD$



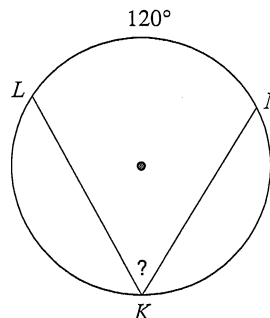
$$180 - 77 = 103$$

7)



$$\frac{154}{2} = 77$$

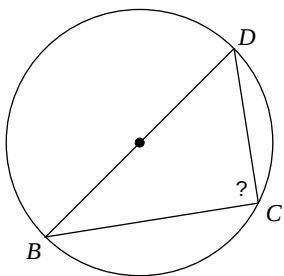
8)



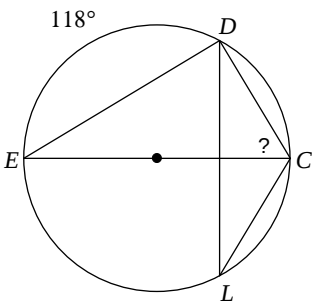
$$\frac{120}{2} = 60$$

Find the measure of the arc or angle indicated.

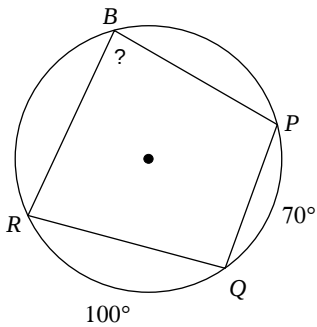
9)



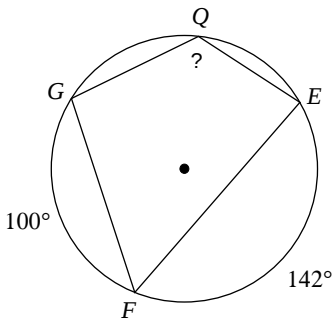
10)



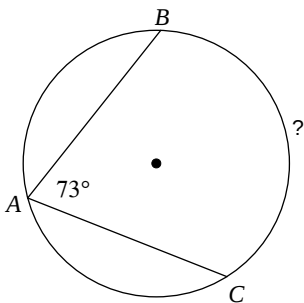
11)



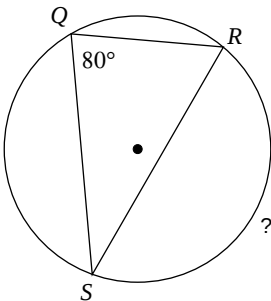
12)



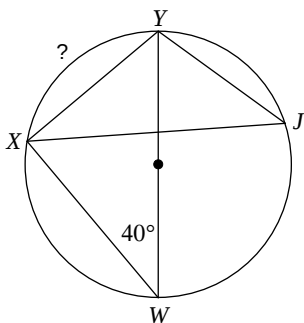
13)



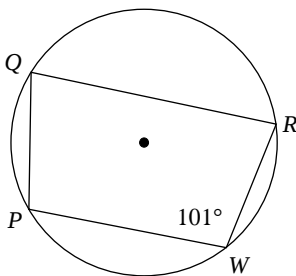
14)



15)

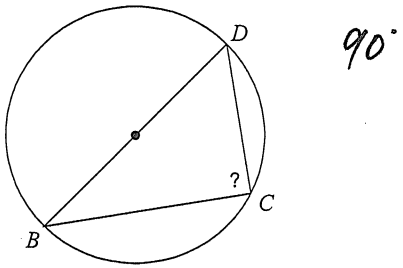


16) Find $m\widehat{PQR}$

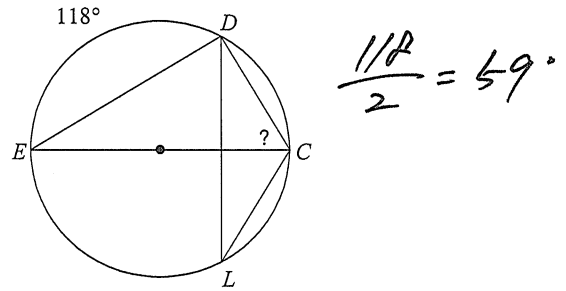


Find the measure of the arc or angle indicated.

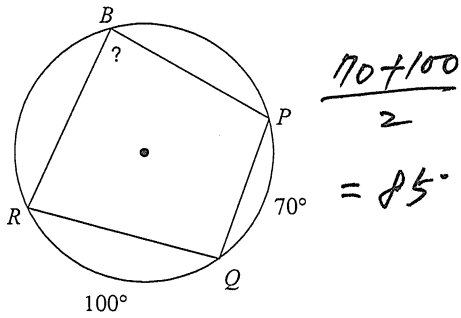
9)



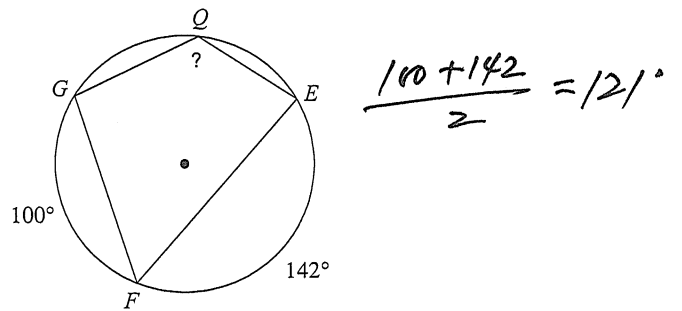
10)



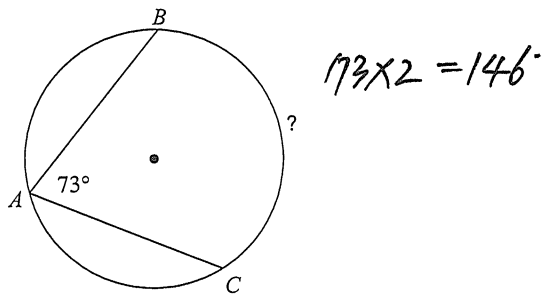
11)



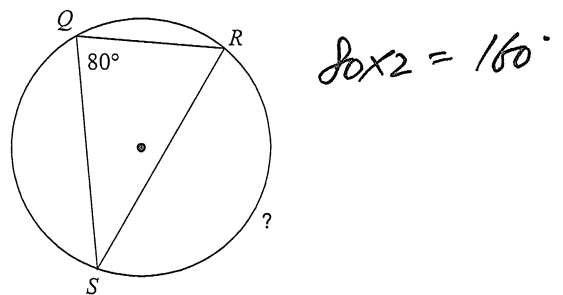
12)



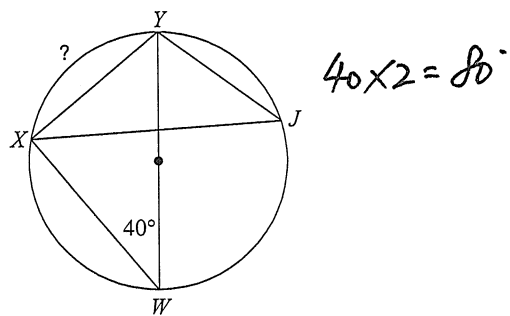
13)



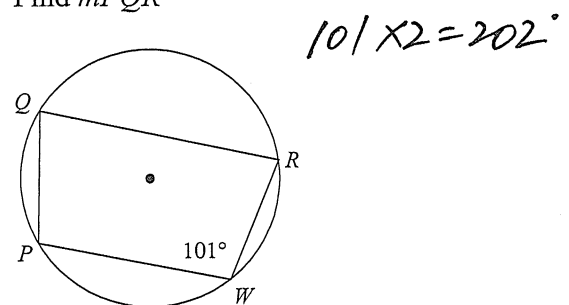
14)



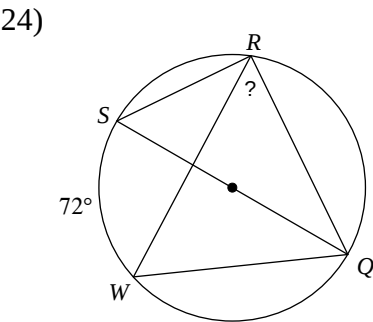
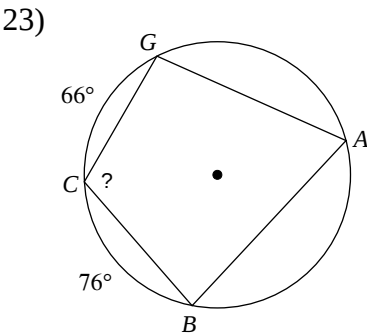
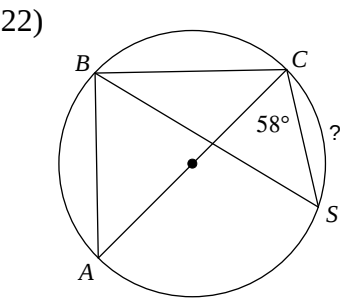
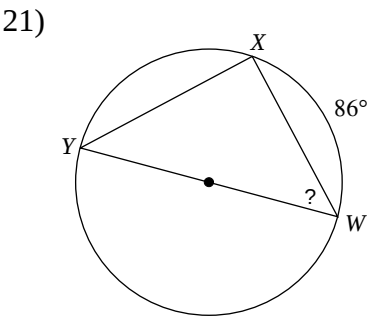
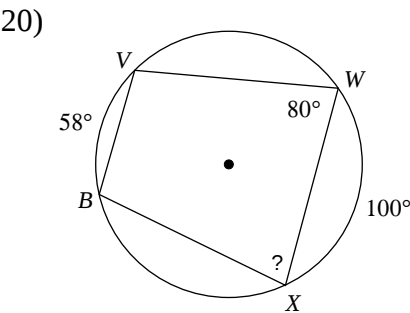
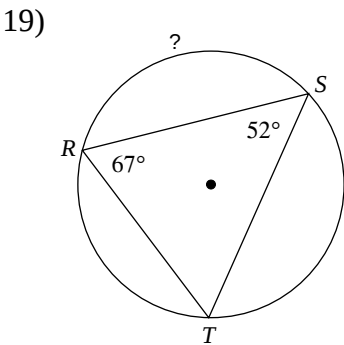
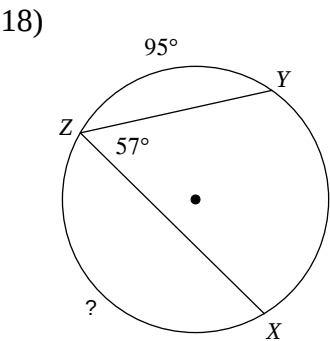
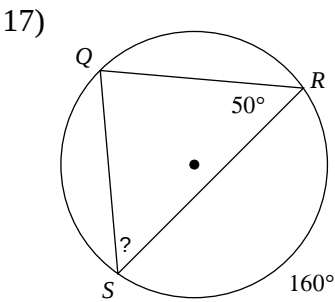
15)



16) Find $m\widehat{PQR}$

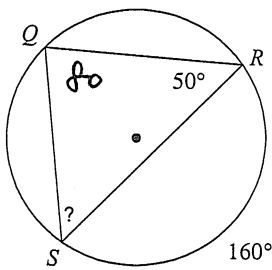


Find the measure of the arc or angle indicated.



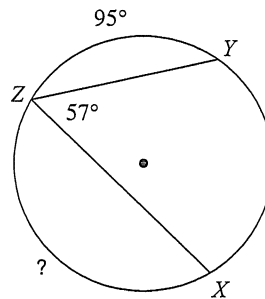
Find the measure of the arc or angle indicated.

17)



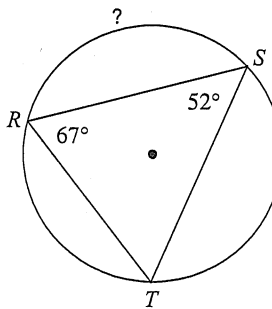
$$180 - 80 - 50 = 50^\circ$$

18)



$$360 - 95 - 57 \times 2 = 151^\circ$$

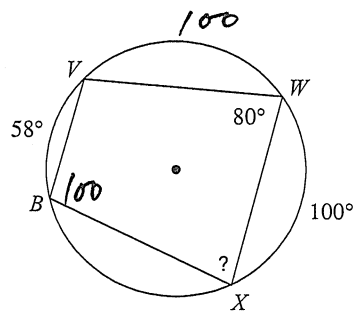
19)



$$180 - 67 - 52 = 61$$

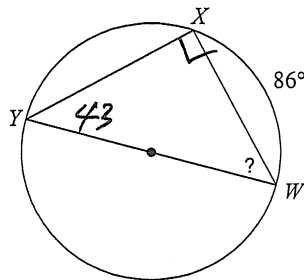
$$61 \times 2 = 122^\circ$$

20)



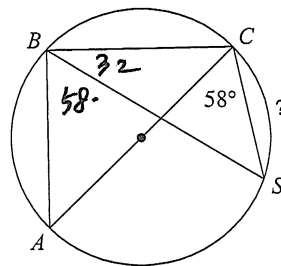
$$\frac{158}{2} = 79^\circ$$

21)



$$90 - 43 = 47^\circ$$

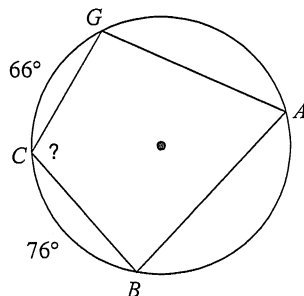
22)



$$90 - 58 = 32^\circ$$

$$32 \times 2 = 64^\circ$$

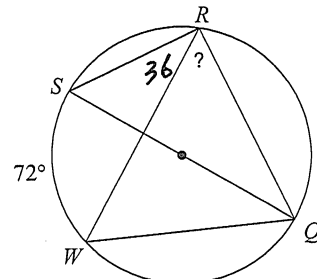
23)



$$\frac{66 + 76}{2} = 71^\circ$$

$$180 - 71 = 109^\circ$$

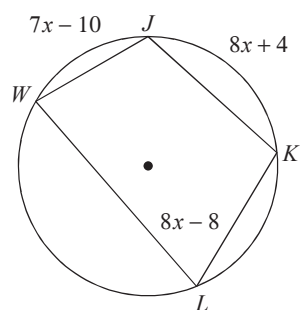
24)



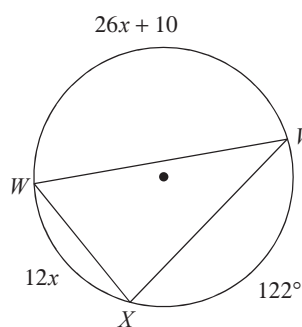
$$90 - 36 = 54^\circ$$

Find the measure of the arc or angle indicated.

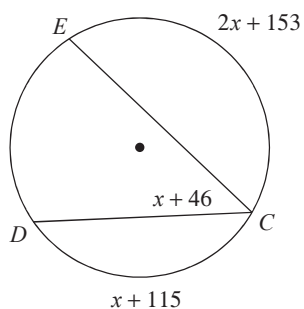
25) Find $m\angle WLK$



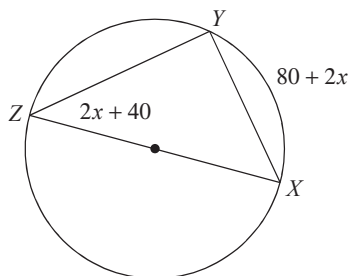
26) Find $m\angle V X W$



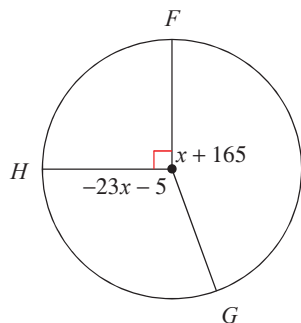
27) Find $m\angle DCE$



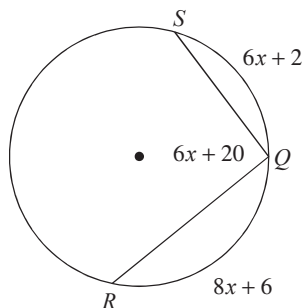
28) Find $m\angle XZY$



29) $m\widehat{GH}$

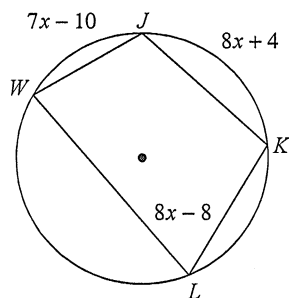


30) Find $m\angle RQS$



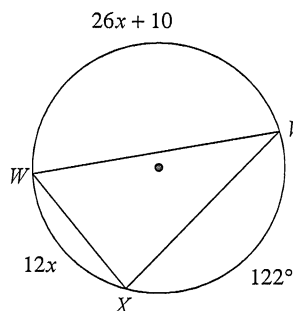
Find the measure of the arc or angle indicated.

25) Find $m\angle WLK$



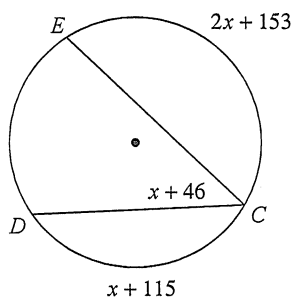
$$\begin{aligned} 7x - 10 + 8x + 4 &= 2(8x - 8) \\ 15x - 6 &= 16x - 16 \\ x &= 10 \quad 8x - 8 = 72^\circ \end{aligned}$$

26) Find $m\angle VXW$



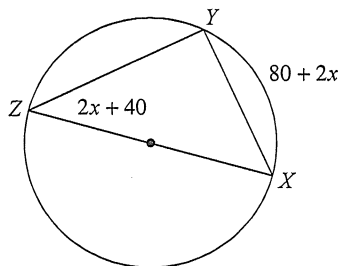
$$\begin{aligned} 26x + 10 + 12x + 122 &= 360 \\ 38x &= 228 \\ x &= 6 \end{aligned} \quad \frac{26 \cdot 6 + 10}{2} = 83^\circ$$

27) Find $m\angle DCE$



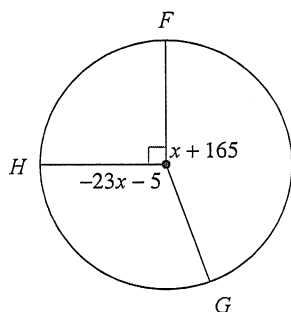
$$\begin{aligned} 2(x + 46) + 2x + 153 + x + 115 &= 360 \\ 5x + 360 &= 360 \quad x = 0 \\ 46^\circ \end{aligned}$$

28) Find $m\angle XZY$



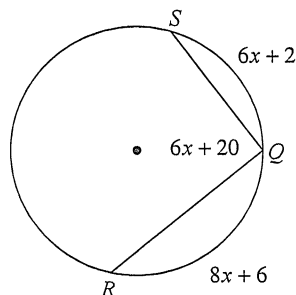
$$\begin{aligned} 80 + 2x &= 2(2x + 40) \\ 2x + 80 &= 4x + 80 \\ x &= 0 \quad 40^\circ \end{aligned}$$

29) $m\widehat{GH}$



$$\begin{aligned} -23x - 5 + x + 165 &= 270 \\ -22x &= 110 \quad (-23)(-5) - 5 \\ x &= -5 \quad = 110^\circ \end{aligned}$$

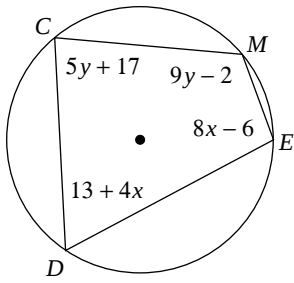
30) Find $m\angle RQS$



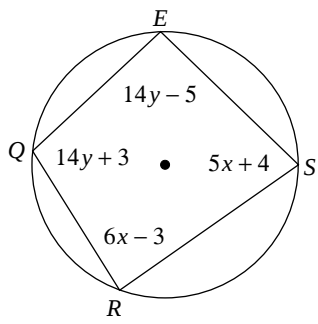
$$\begin{aligned} 2(6x + 20) + 6x + 2 + 8x + 6 &= 360 \\ 26x &= 312 \quad x = 12 \\ 6(12) + 20 &= 92^\circ \end{aligned}$$

Solve for x and y .

31)

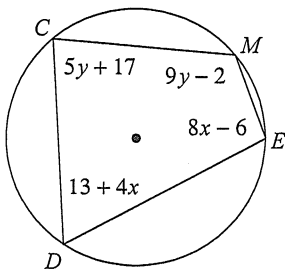


32)



Solve for x and y .

31)



$$\begin{cases} 8x - 6 + 5y + 17 = 180 \\ 4x + 13 + 9y - 2 = 180 \end{cases}$$

$$\begin{aligned} 8x + 5y &= 169 \\ (4x + 9y &= 169) \times 2 \\ - 8x + 18y &= 338 \end{aligned}$$

$$-13y = -169$$

$$y = 13$$

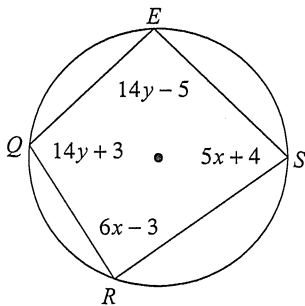
$$(13, 13)$$

$$8x + 5(13) = 169$$

$$8x = 104$$

$$x = 13$$

32)



$$\begin{cases} 6x - 3 + 14y - 5 = 180 \\ 5x + 4 + 14y + 3 = 180 \end{cases}$$

$$\begin{aligned} 6x + 14y &= 188 \\ - 5x + 14y &= 173 \\ \hline x &= 15 \end{aligned}$$

$$(15, 7)$$

$$6 \cdot 15 + 14y = 188$$

$$14y = 98$$

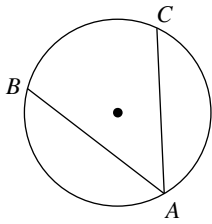
$$y = 7$$

Inscribed Angles

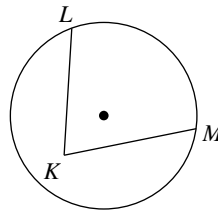
Date _____ Period _____

State if each angle is an inscribed angle. If it is, name the angle and the intercepted arc.

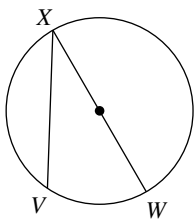
1)



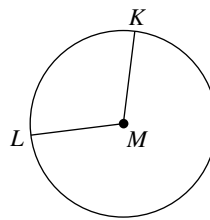
2)



3)

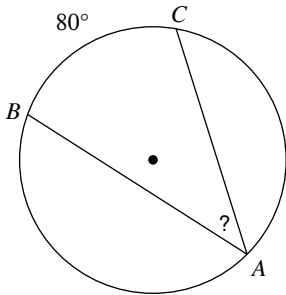


4)

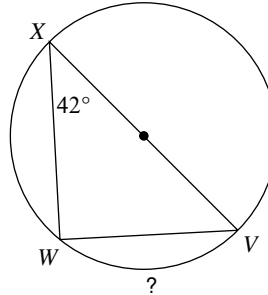


Find the measure of the arc or angle indicated.

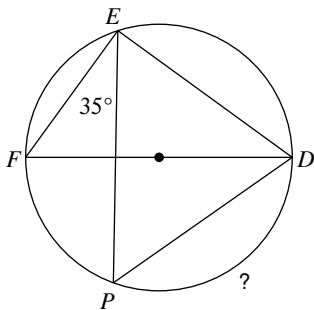
5)



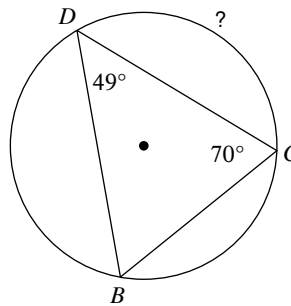
6)



7)



8)

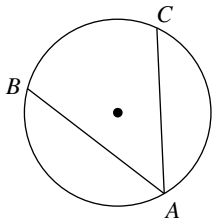


Inscribed Angles

Date _____ Period _____

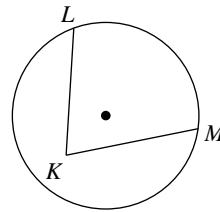
State if each angle is an inscribed angle. If it is, name the angle and the intercepted arc.

1)



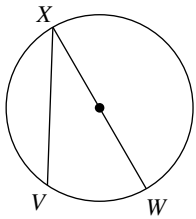
Yes; $m\angle BAC$, $\widehat{BC}$

2)



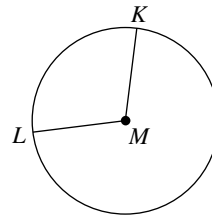
No

3)



Yes; $m\angle WXV$, $\widehat{WV}$

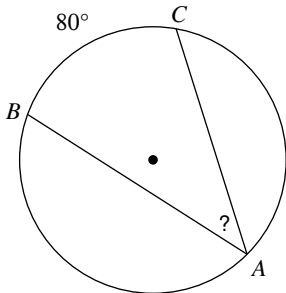
4)



No

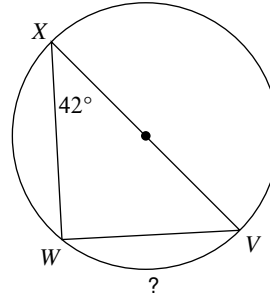
Find the measure of the arc or angle indicated.

5)



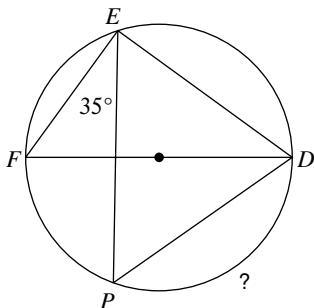
40°

6)



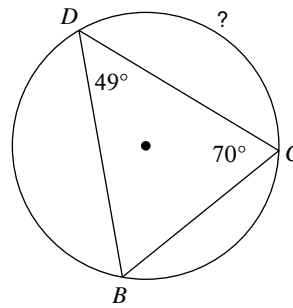
84°

7)



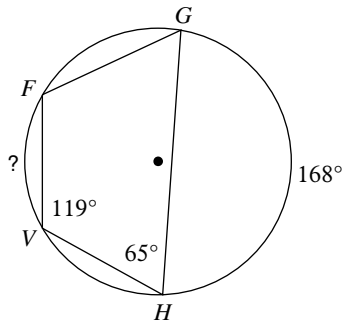
110°

8)

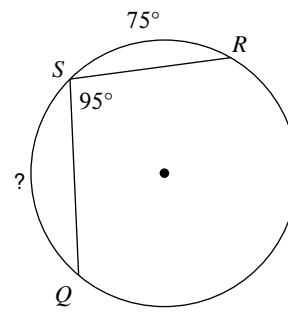


122°

9)

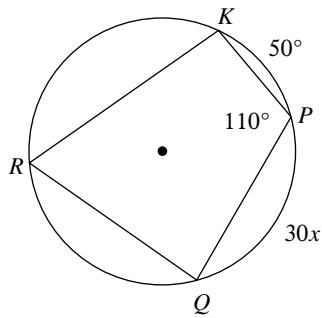


10)

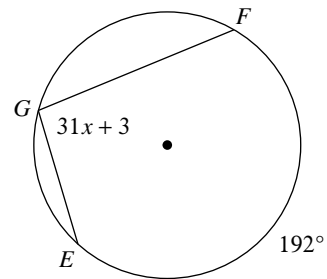


Solve for x .

11)

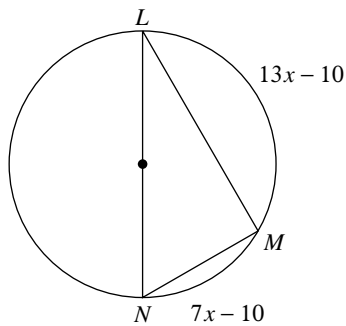


12)

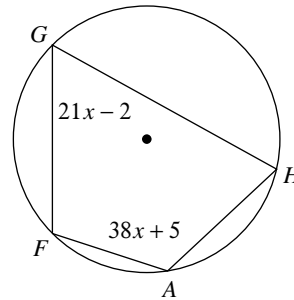


Find the measure of the arc or angle indicated.

13) Find $m\angle NLM$

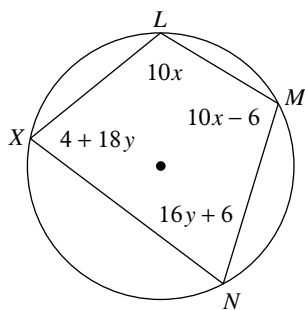


14) Find $m\widehat{FGH}$

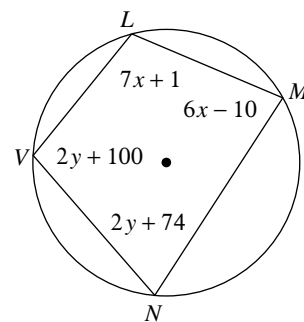


Solve for x and y .

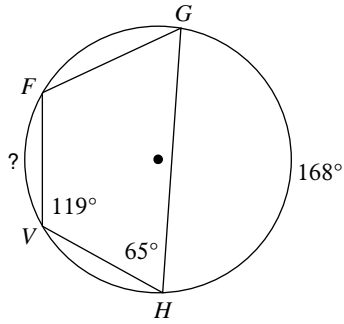
15)



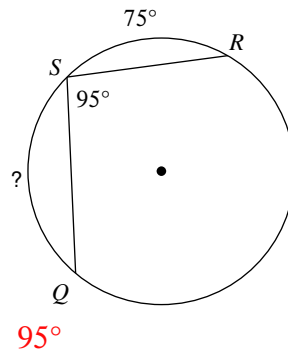
16)



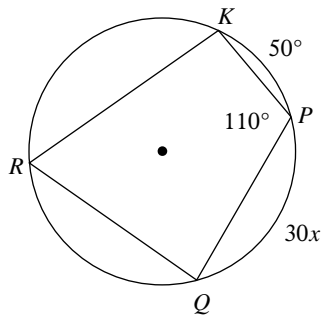
9)

 60° 

10)

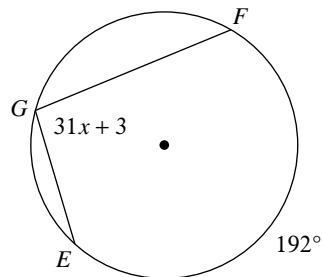
Solve for x .

11)



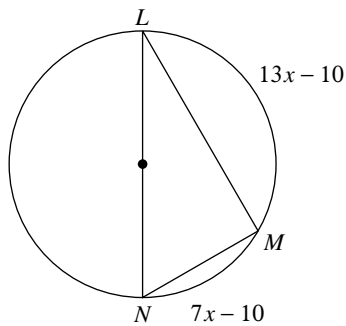
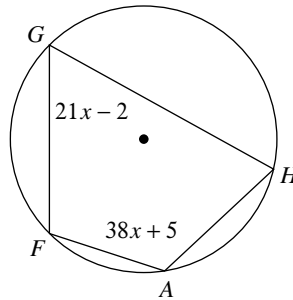
3

12)

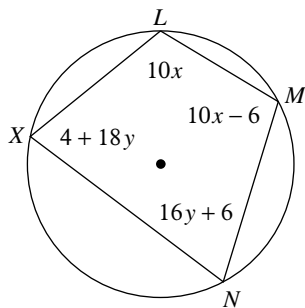


3

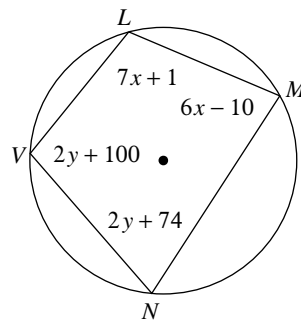
Find the measure of the arc or angle indicated.

13) Find $m\angle NLM$ 30° 14) Find $m\widehat{FGH}$  238° Solve for x and y .

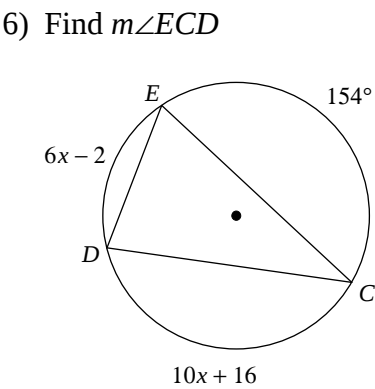
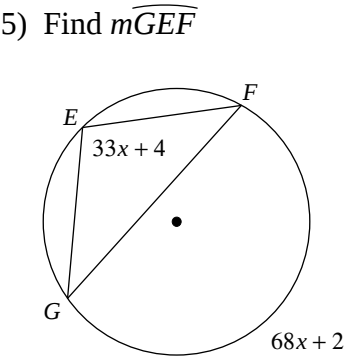
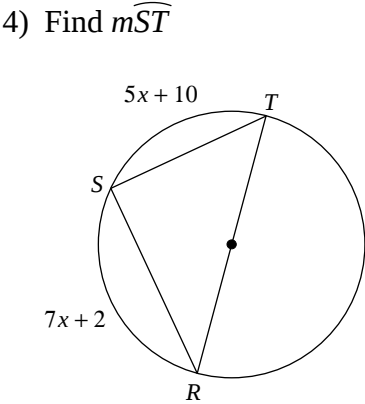
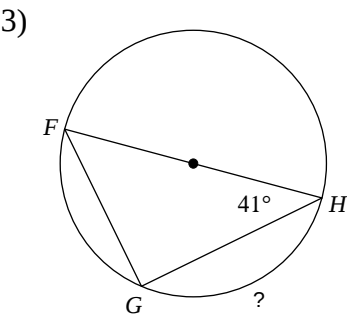
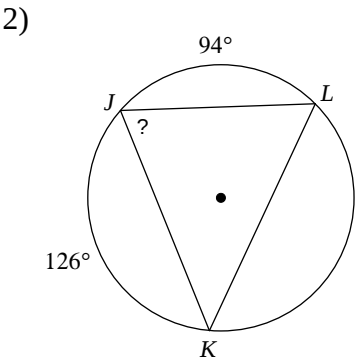
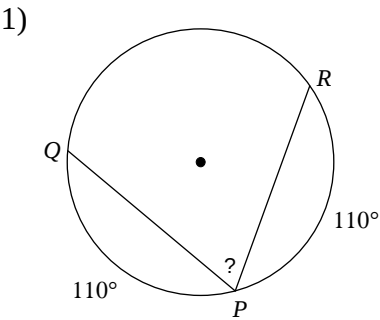
15)

 $x = 11, y = 4$

16)

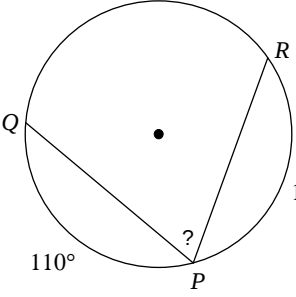
 $x = 15, y = 0$

Find the measure of the arc or angle indicated.



Find the measure of the arc or angle indicated.

1)



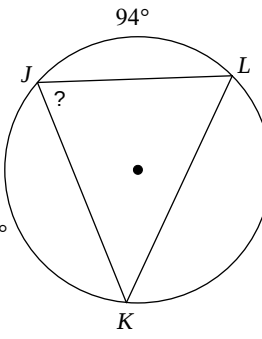
110°

110°

?

70°

2)



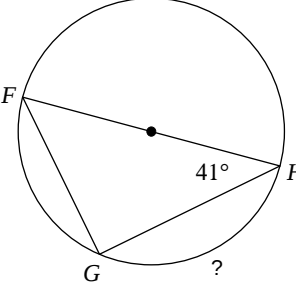
94°

?

126°

70°

3)

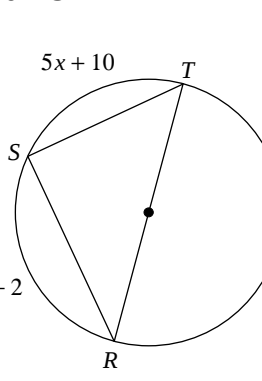


41°

?

98°

4) Find $m\widehat{ST}$

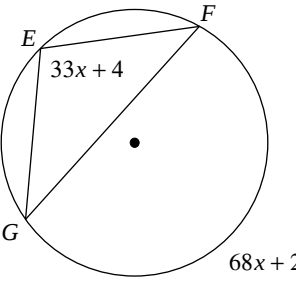


5x + 10

7x + 2

80°

5) Find $m\widehat{GEF}$

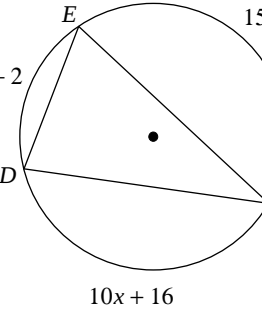


33x + 4

68x + 2

154°

6) Find $m\angle ECD$



6x - 2

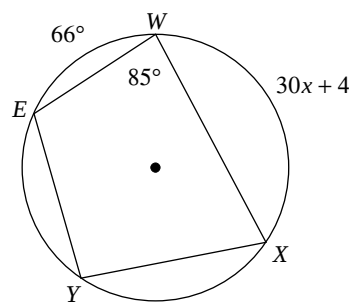
154°

10x + 16

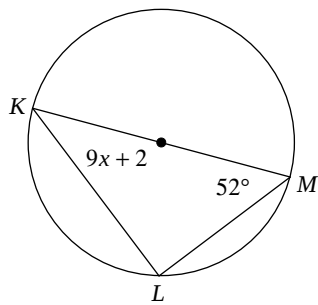
35°

Solve for x .

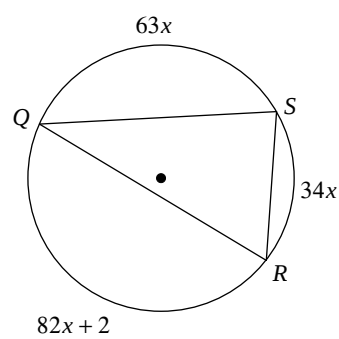
7)



8)

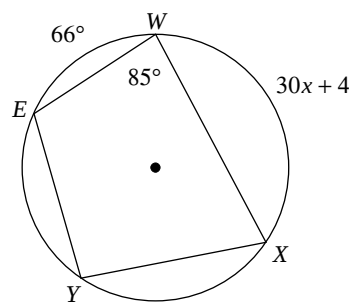


9)



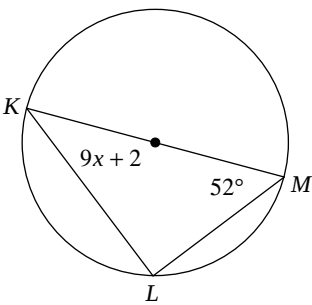
Solve for x .

7)



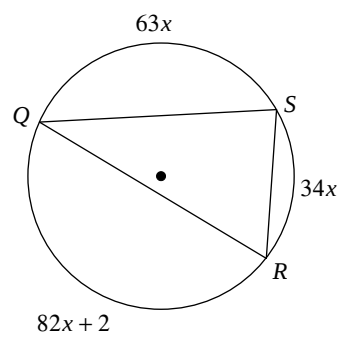
4

8)



4

9)



2

Inscribed Quadrilateral WS

Find the indicated value.

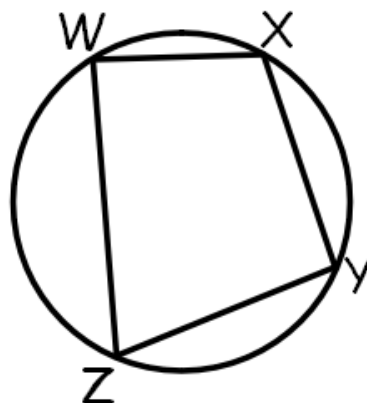
1. $m\angle W = 93^\circ$ and $m\angle Z = 84^\circ$.

a. Find $m\angle X$

b. Find $m\angle Y$

c. Find $m\widehat{ZX}$

d. Find $m\widehat{WY}$



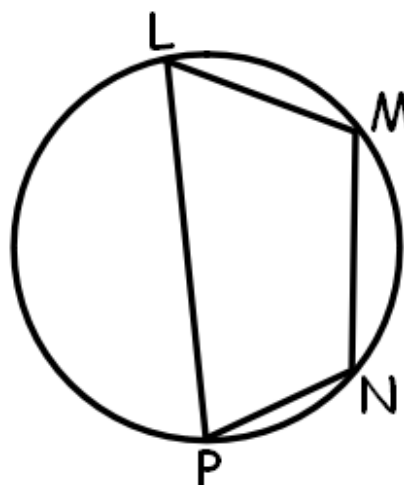
2. $m\widehat{LM} = 68^\circ$ and $m\widehat{MN} = 92^\circ$. $m\angle M = 11x + 1$ and $m\angle N = 91^\circ$.

a. Find the value of x .

b. Find $m\angle L$

c. Find $m\angle P$

d. Find $m\widehat{LP}$



3. $m\angle X = 14x + 3$, $m\widehat{WZ} = 17x + 13$, and $m\widehat{ZY} = 9x + 7$

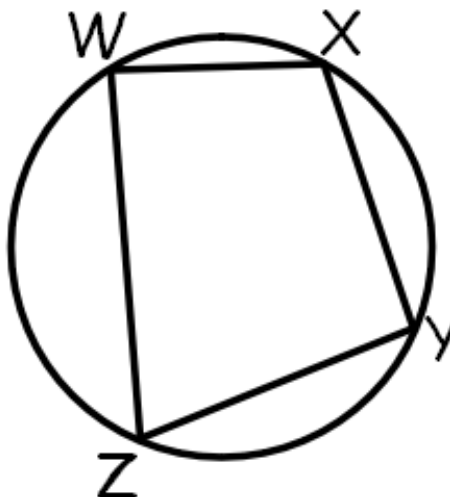
a. Find the value of x .

b. Find $m\widehat{WZ}$

c. Find $m\widehat{ZY}$

d. Find $m\angle X$

e. Find $m\angle Z$



Find the indicated value.

1. $m\angle W = 93^\circ$ and $m\angle Z = 84^\circ$.

a. Find $m\angle X$

$$180 - 84 = 96^\circ$$

b. Find $m\angle Y$

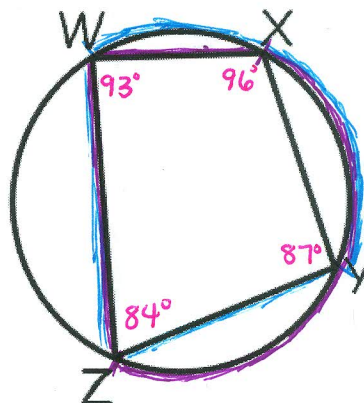
$$180 - 93 = 87^\circ$$

c. Find $m\widehat{ZX}$

$$2(93) = 186^\circ$$

d. Find $m\widehat{WY}$ ← minor arc

$$2(84) = 168^\circ$$



2. $m\widehat{LM} = 68^\circ$ and $m\widehat{MN} = 92^\circ$. $m\angle M = 11x + 1$ and $m\angle N = 91^\circ$.

a. Find the value of x.

$$9$$

b. Find $m\angle L$

$$180 - 91 = 89^\circ$$

c. Find $m\angle P$

$$\frac{68 + 92}{2} = 80$$

d. Find $m\widehat{LP}$

$$2(91) = 182 = m\widehat{PLM}$$

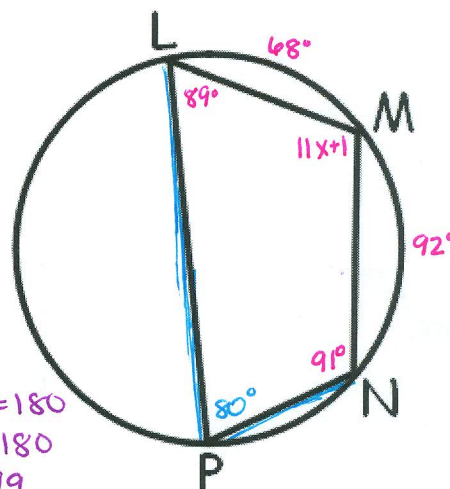
$$182 - 68 = 114 = m\widehat{LP}$$

$$11x + 1 + 80 = 180$$

$$11x + 81 = 180$$

$$11x = 99$$

$$x = 9$$



3. $m\angle X = 14x + 3$, $m\widehat{WZ} = 17x + 13$, and $m\widehat{ZY} = 9x + 7$

a. Find the value of x.

$$17x + 13 + 9x + 7 = 2(14x + 3)$$

$$26x + 20 = 28x + 6$$

$$20 = 2x + 6$$

$$14 = 2x$$

$$7 = x$$

b. Find $m\widehat{WZ}$

$$132^\circ$$

c. Find $m\widehat{ZY}$

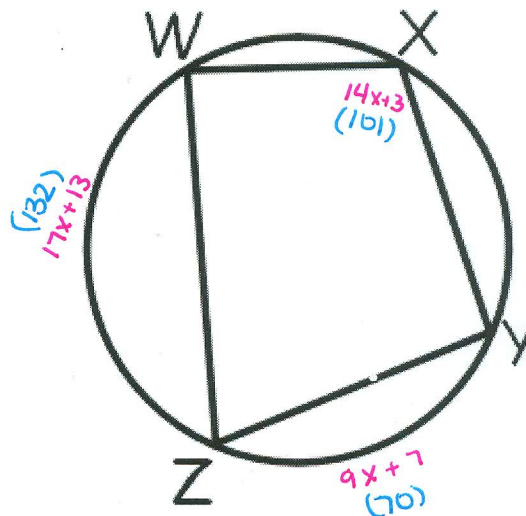
$$70^\circ$$

d. Find $m\angle X$

$$101^\circ$$

e. Find $m\angle Z$

$$180 - 101 = 79^\circ$$



WS C-INSCRIBED QUADRILATERALS

Find the indicated value.

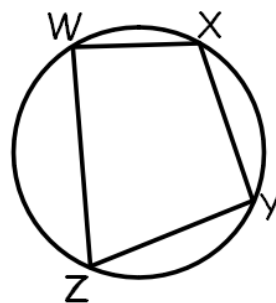
1. $m\angle W = 93^\circ$, $m\angle Z = 84^\circ$, and $m\widehat{XY} = 80^\circ$.

a. Find $m\angle X$

b. Find $m\angle Y$

c. Find $m\widehat{WX}$

d. Find $m\widehat{WZ}$



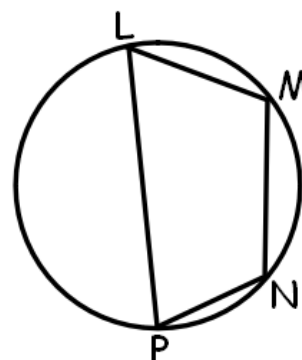
2. $m\widehat{LM} = 68^\circ$ and $m\widehat{MN} = 92^\circ$. $m\angle M = 11x + 1$ and $m\angle N = 91^\circ$.

a. Find the value of x .

b. Find $m\angle L$

c. Find $m\angle P$

d. Find $m\angle P$



3. $m\angle X = 14x + 3$, $m\widehat{WZ} = 17x + 13$, and $m\widehat{ZY} = 9x + 7$

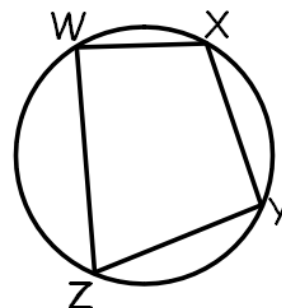
a. Find the value of x .

b. Find $m\widehat{WZ}$

c. Find $m\widehat{ZY}$

d. Find $m\angle X$

e. Find $m\angle Z$



WSC-INScribed QUADRILATERALS

Find the indicated value.

1. $m\angle W = 93^\circ$, $m\angle Z = 84^\circ$, and $m\widehat{XY} = 80^\circ$.

a. Find $m\angle X$

96°

b. Find $m\angle Y$

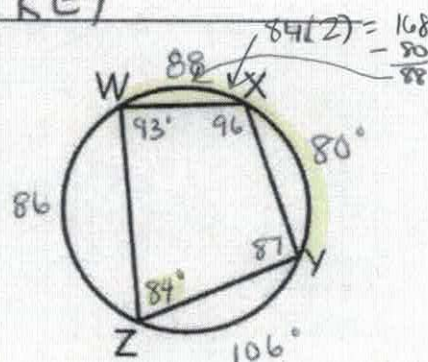
87°

c. Find $m\widehat{WX}$

88°

d. Find $m\widehat{WZ}$

86°



2. $m\widehat{LM} = 68^\circ$ and $m\widehat{MN} = 92^\circ$. $m\angle M = 11x + 1$ and $m\angle N = 91^\circ$.

a. Find the value of x.

9

b. Find $m\angle L$

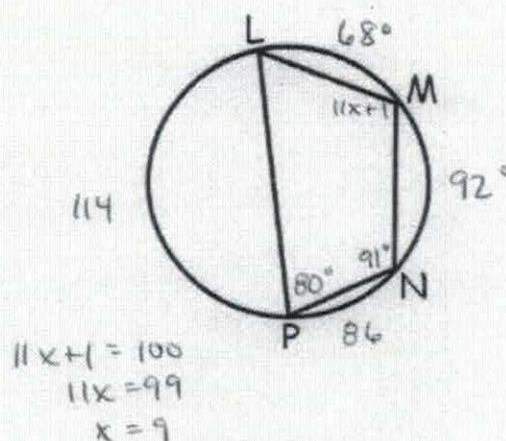
89°

c. Find $m\angle P$

80°

d. Find $m\angle P$

114°



3. $m\angle X = 14x + 3$, $m\widehat{WZ} = 17x + 13$, and $m\widehat{ZY} = 9x + 7$

a. Find the value of x.

7

b. Find $m\widehat{WZ}$

132°

c. Find $m\widehat{ZY}$

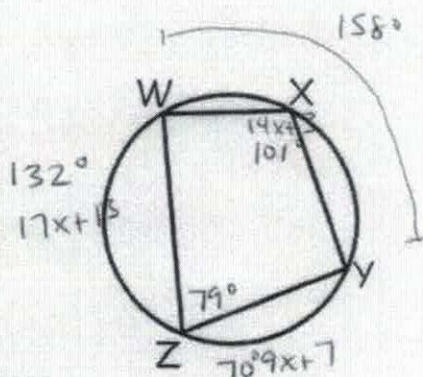
70°

d. Find $m\angle X$

101°

e. Find $m\angle Z$

79°



$$17x + 13 + 9x + 7 = 2(14x + 3)$$

$$26x + 20 = 28x + 6$$

$$14 = 2x$$

$$x = 7$$

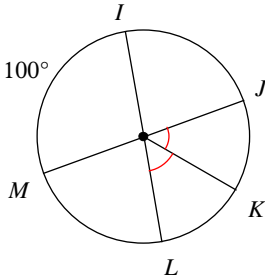
10.1 - Central Angles and Inscribed Angles

Date_____ Period____

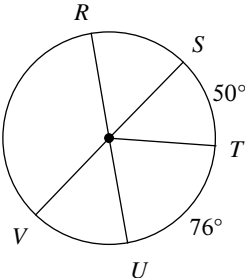
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Find the measure of the arc or central angle indicated.

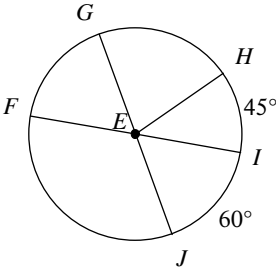
1) $m\widehat{KL}$



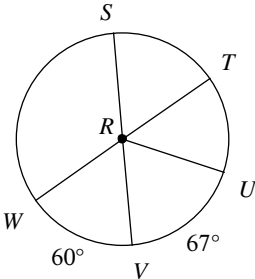
2) $m\widehat{SUR}$



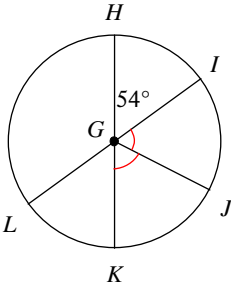
3) $m\angle JEF$



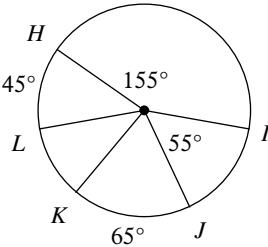
4) $m\angle SRU$



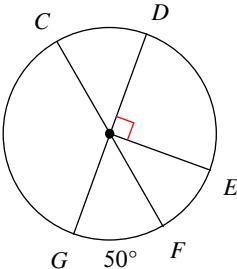
5) $m\angle JGK$



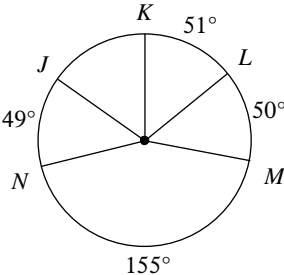
6) $m\widehat{LIK}$



7) $m\widehat{DF}$

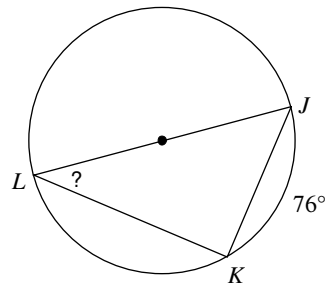


8) $m\widehat{JK}$

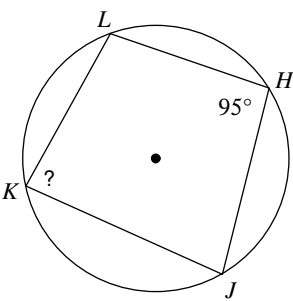


Find the measure of the arc or angle indicated.

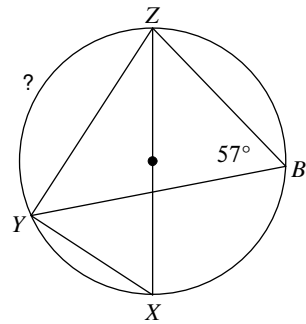
9)



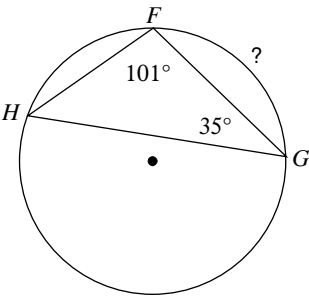
10)



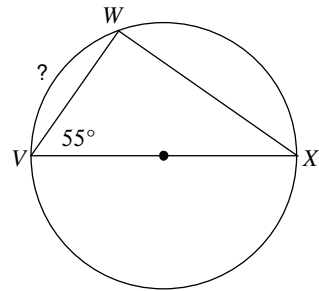
11)



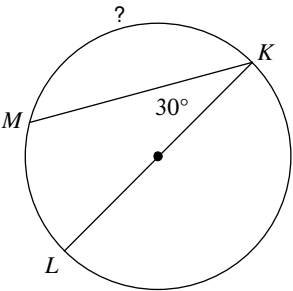
12)



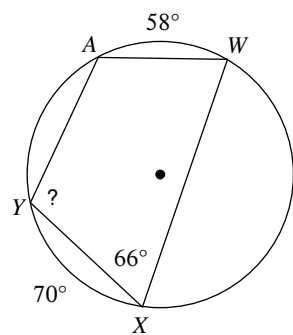
13)



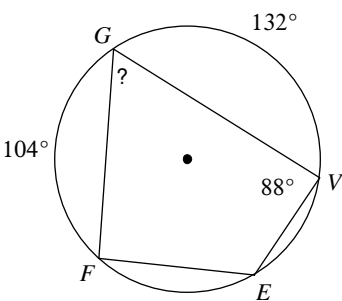
14)



15)



16)



Answers to 10.1 - Central Angles and Inscribed Angles

1) 50°

2) 306°

3) 120°

4) 113°

5) 63°

6) 320°

7) 130°

8) 55°

9) 38°

10) 85°

11) 114°

12) 88°

13) 70°

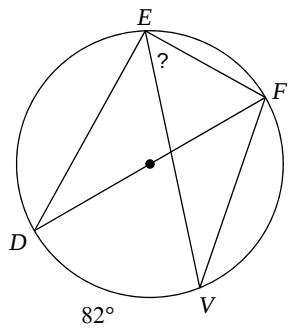
14) 120°

15) 108°

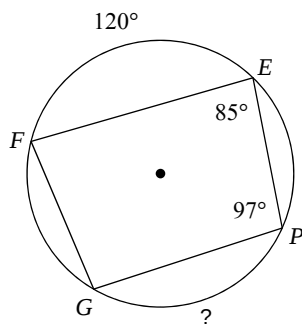
16) 62°

Find the measure of the arc or angle indicated.

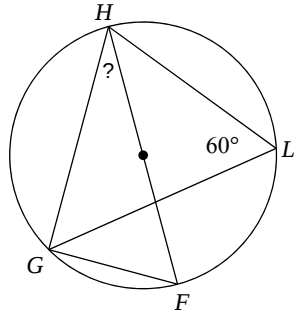
35)



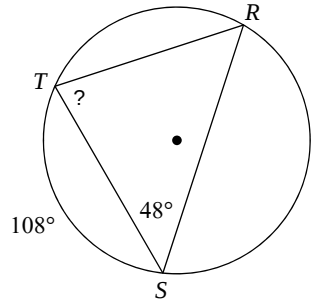
36)



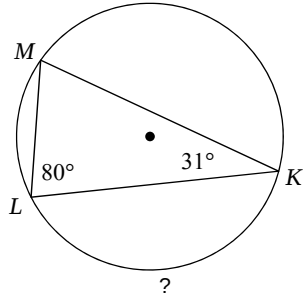
37)



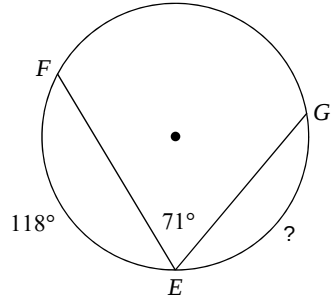
38)



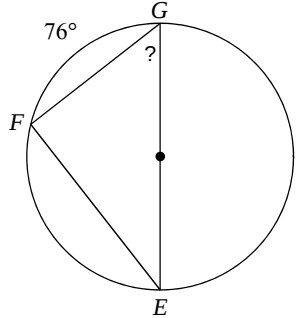
39)



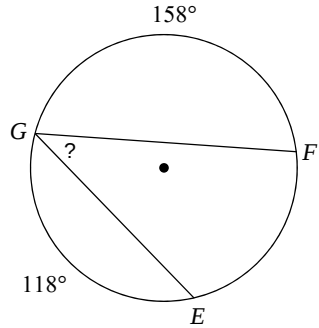
40)



41)

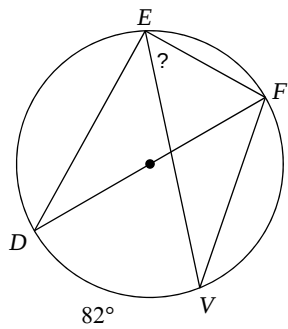


42)



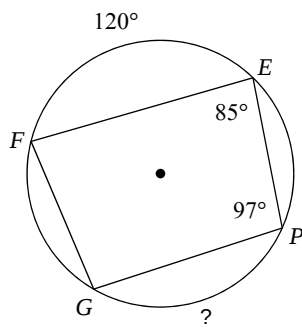
Find the measure of the arc or angle indicated.

35)



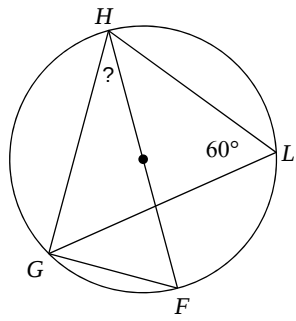
49°

36)



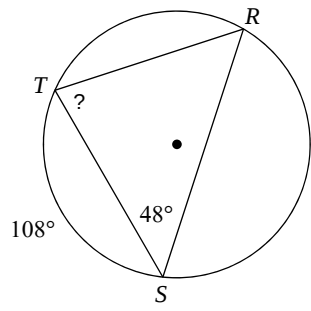
96°

37)



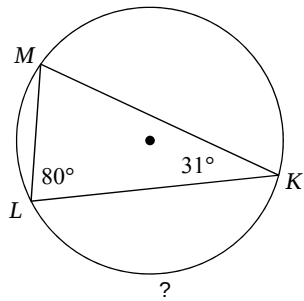
30°

38)



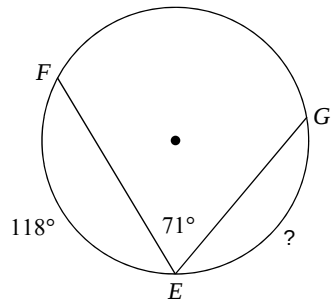
78°

39)



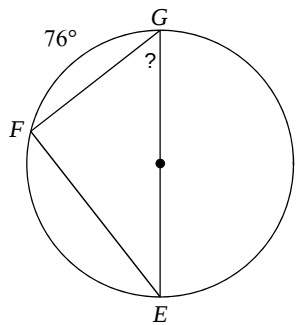
138°

40)



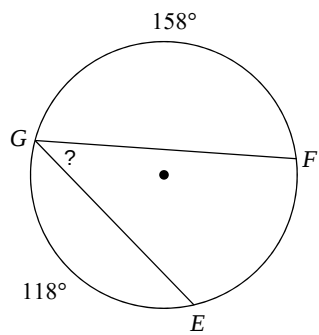
100°

41)



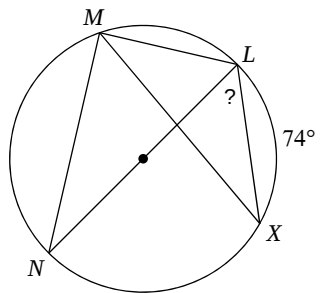
52°

42)

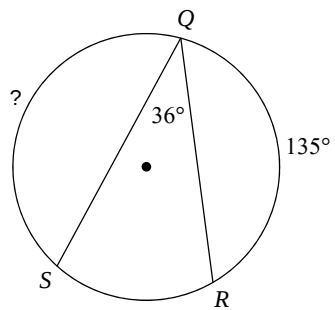


42°

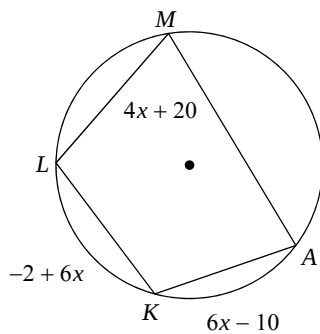
43)



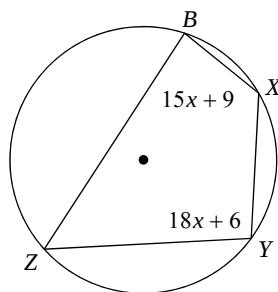
44)

**Solve for x .**

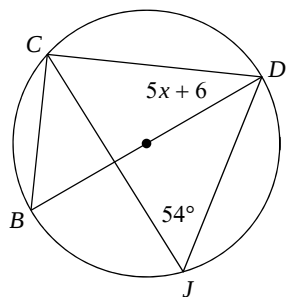
45)



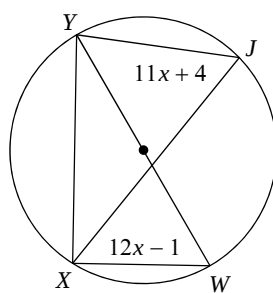
46)



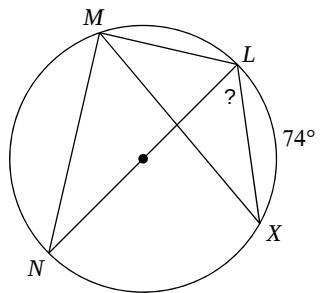
47)



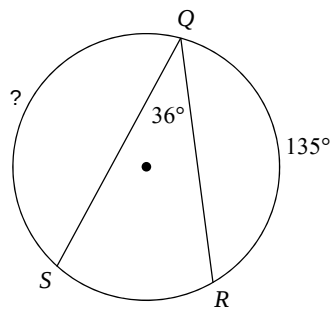
48)



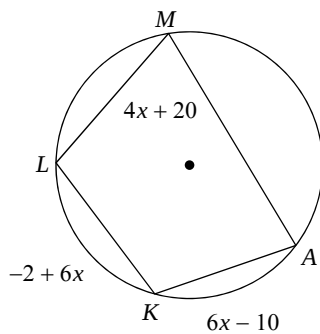
43)

 53°

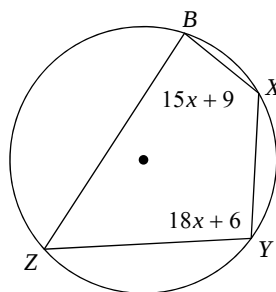
44)

 153° **Solve for x.**

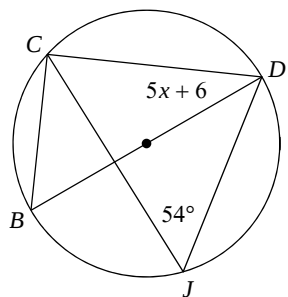
45)

 13

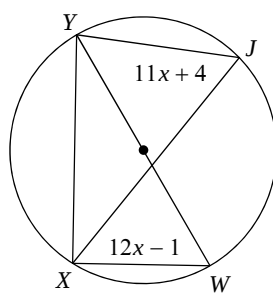
46)

 5

47)

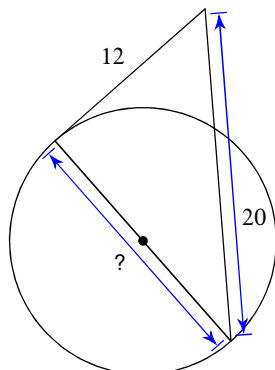
 5

48)

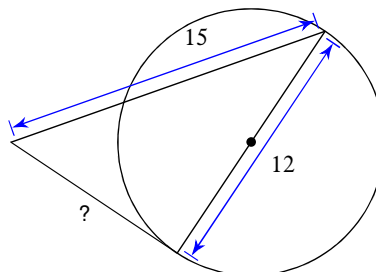
 6

Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

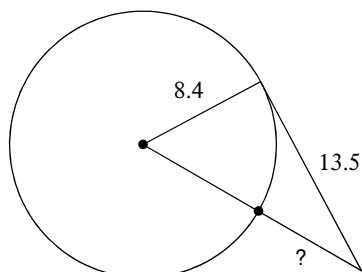
1)



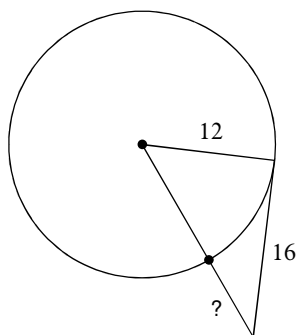
2)



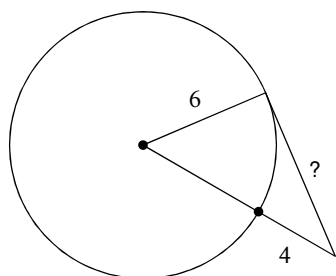
3)



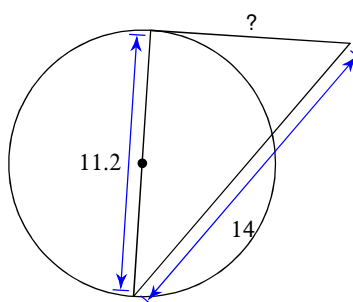
4)



5)

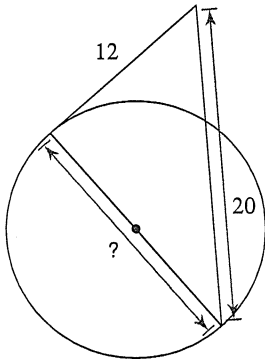


6)



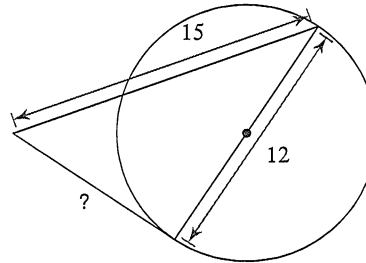
Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

1)



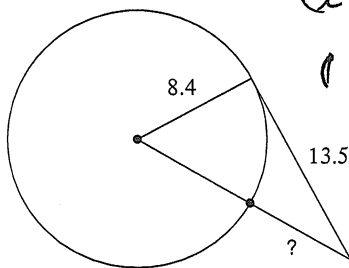
$$\begin{aligned} x^2 &= 20^2 - 12^2 \\ &= 256 \\ x &= 16 \end{aligned}$$

2)



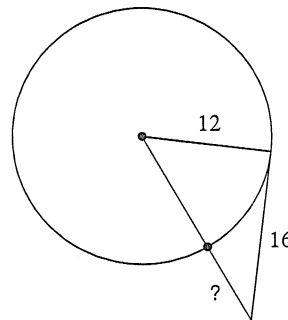
$$\begin{aligned} x^2 &= 15^2 - 12^2 \\ &= 81 \\ x &= 9 \end{aligned}$$

3)

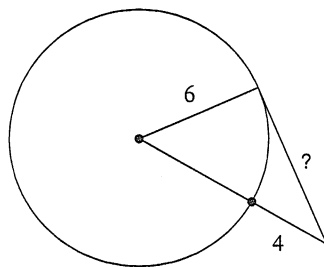


$$\begin{aligned} (x + 8.4)^2 &= 8.4^2 + 13.5^2 \\ &= 252.81 \\ x + 8.4 &= 15.9 \\ x &= 7.5 \end{aligned}$$

$$\begin{aligned} (x + 12)^2 &= 12^2 + 16^2 \\ &= 400 \\ x + 12 &= 20 \\ x &= 8 \end{aligned}$$

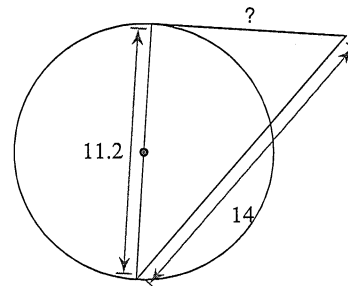


5)



$$\begin{aligned} x^2 &= 10^2 - 6^2 \\ &= 64 \\ x &= 8 \end{aligned}$$

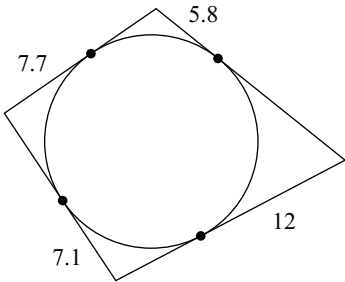
6)



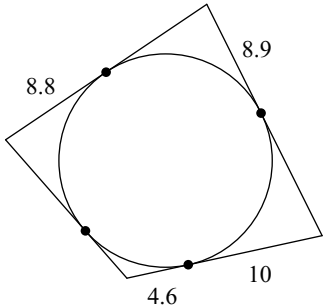
$$\begin{aligned} x^2 &= 14^2 - (11.2)^2 \\ &= 70.56 \\ x &= 8.4 \end{aligned}$$

Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

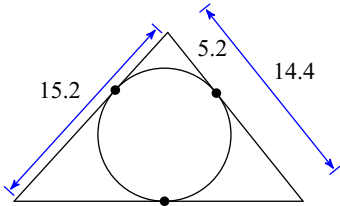
1)



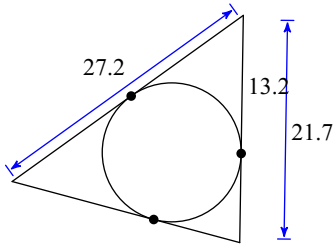
2)



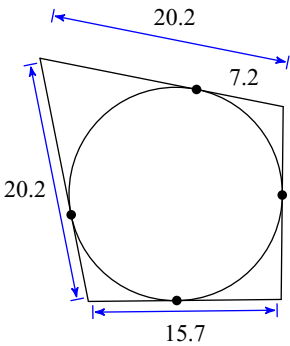
3)



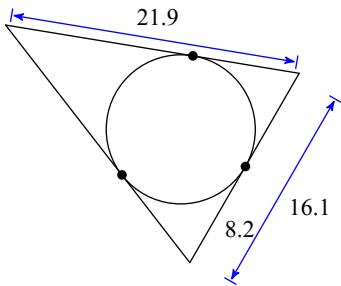
4)



5)

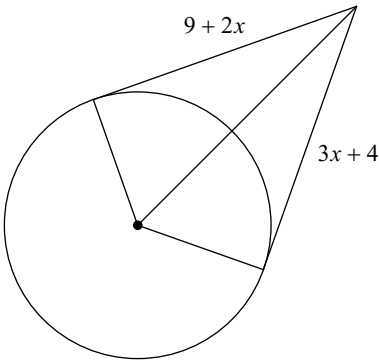


6)

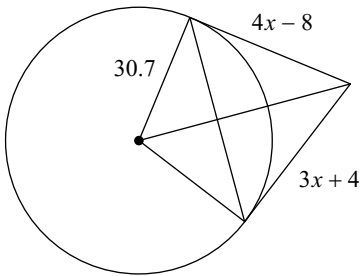


Solve for x . Assume that lines which appear to be tangent are tangent.

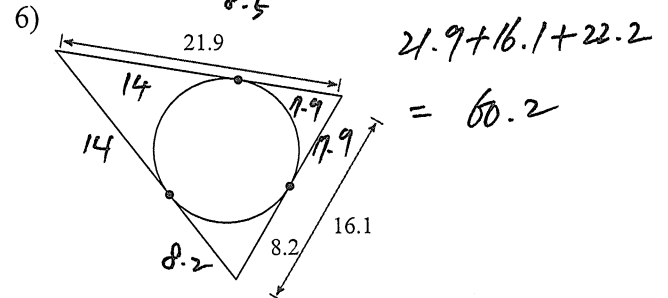
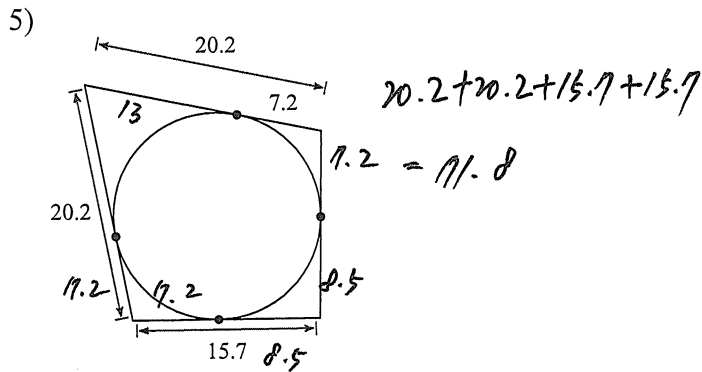
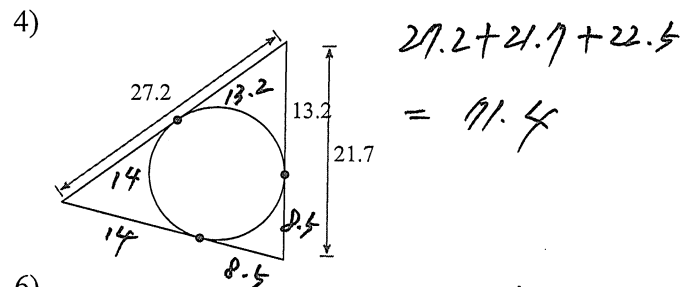
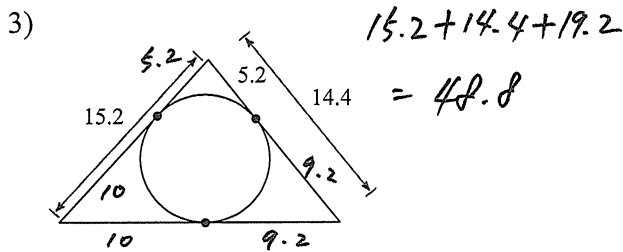
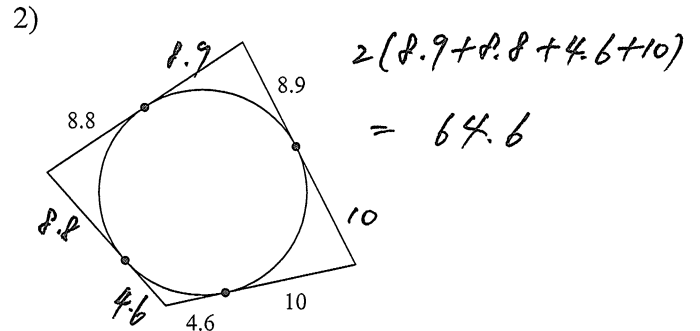
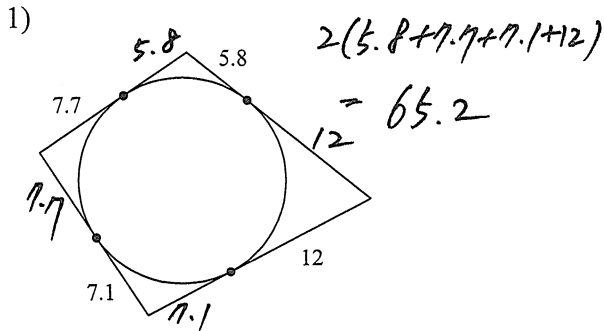
7)



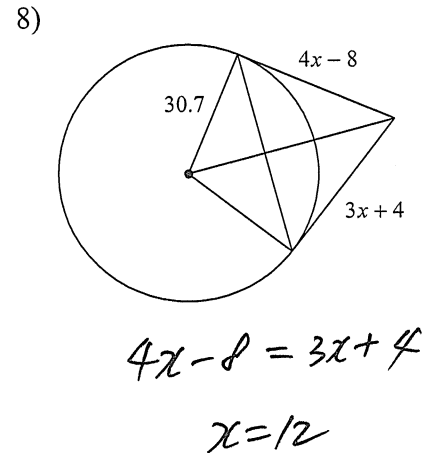
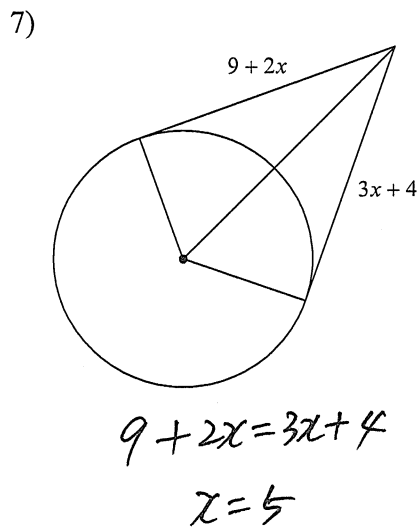
8)



Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.



Solve for x . Assume that lines which appear to be tangent are tangent.

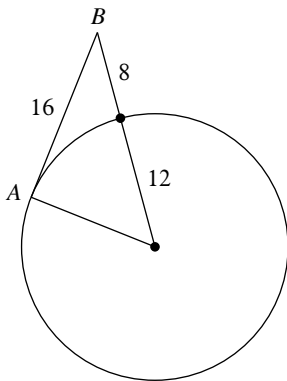


Tangents to Circles

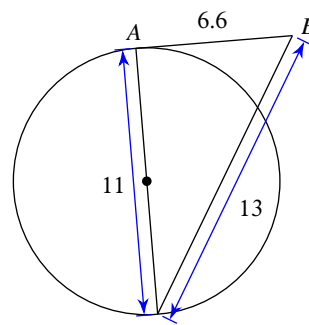
Date _____ Period _____

Determine if line AB is tangent to the circle.

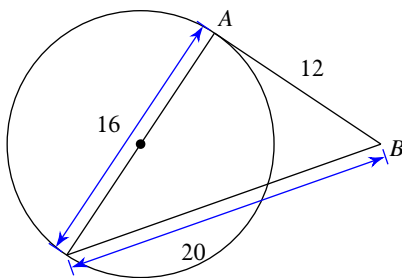
1)



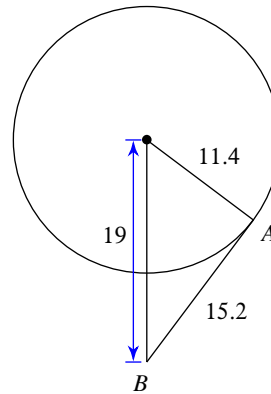
2)



3)

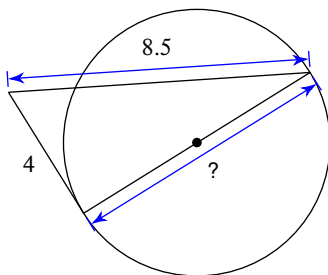


4)

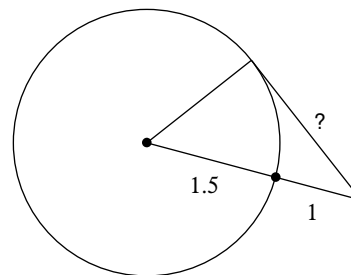


Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

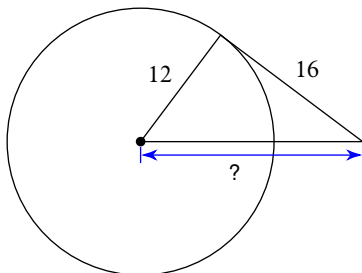
5)



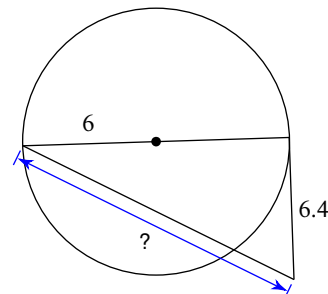
6)



7)



8)

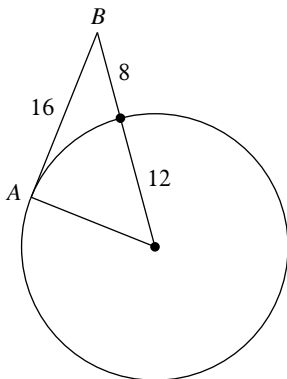


Tangents to Circles

Date _____ Period _____

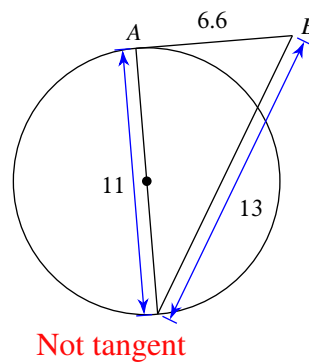
Determine if line AB is tangent to the circle.

1)



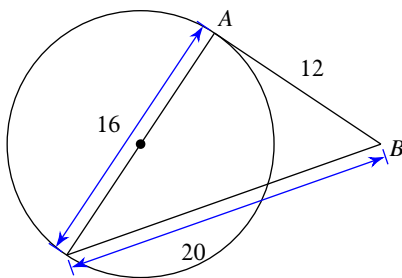
Tangent

2)



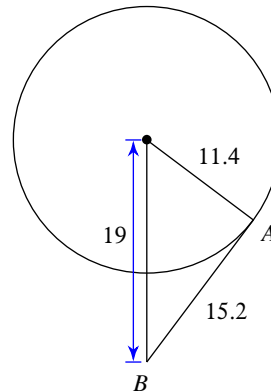
Not tangent

3)



Tangent

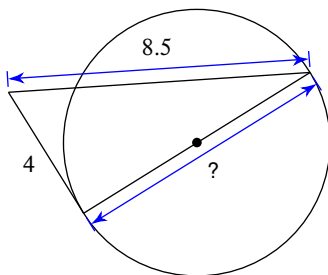
4)



Tangent

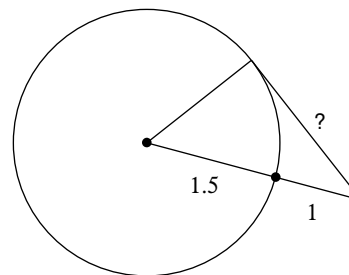
Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

5)



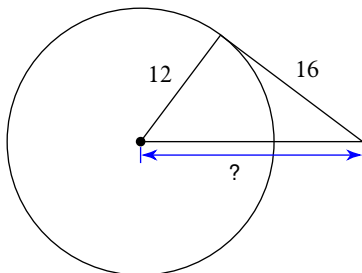
7.5

6)



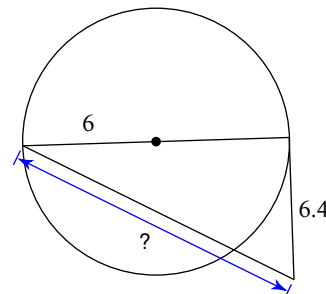
2

7)



20

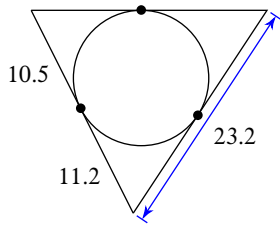
8)



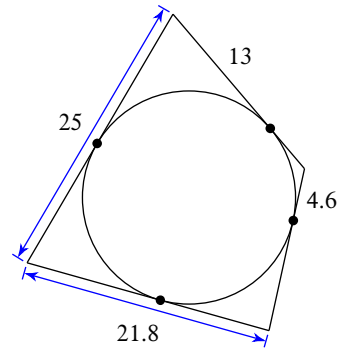
13.6

Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

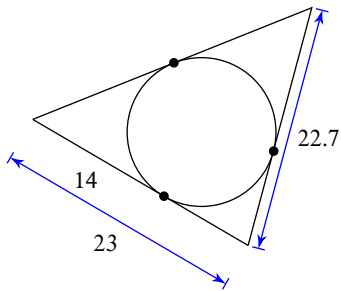
9)



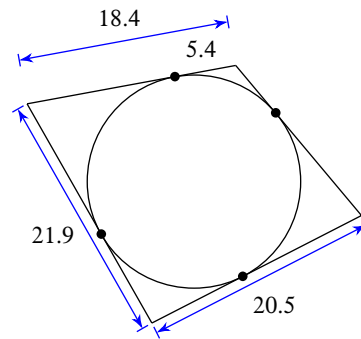
10)



11)

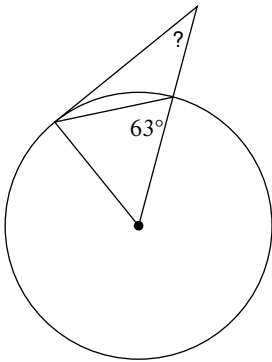


12)

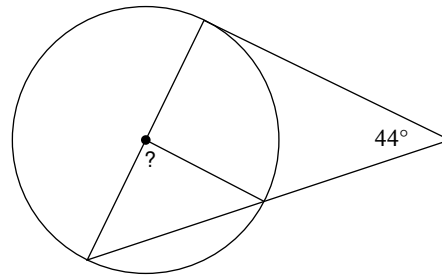


Find the angle measure indicated. Assume that lines which appear to be tangent are tangent.

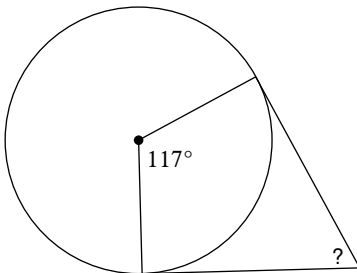
13)



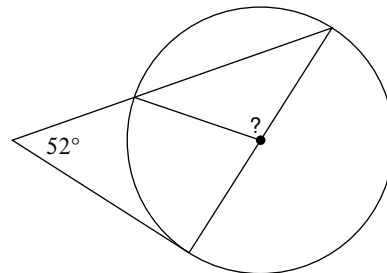
14)



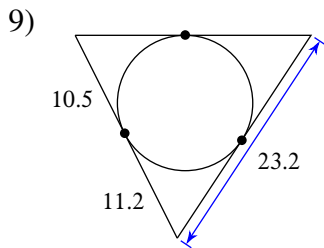
15)



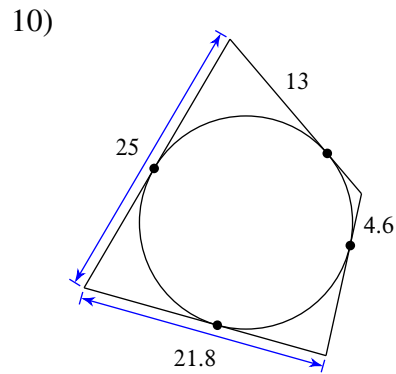
16)



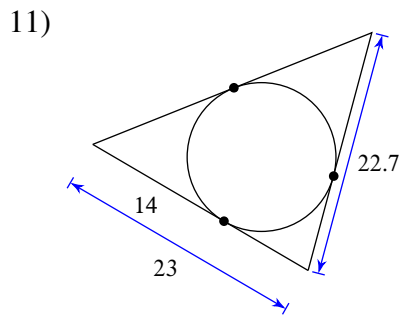
Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.



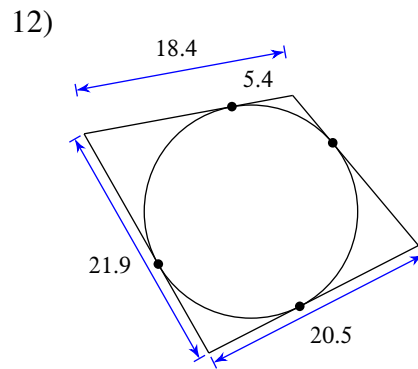
67.4



78.8

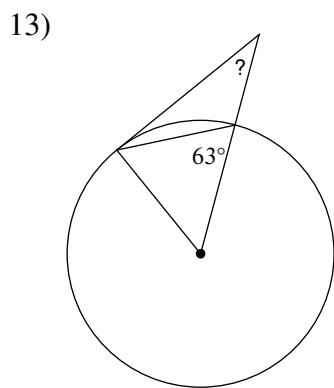


73.4

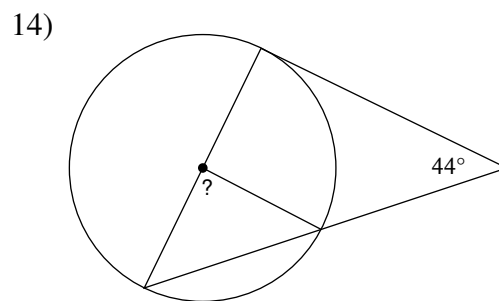


77.8

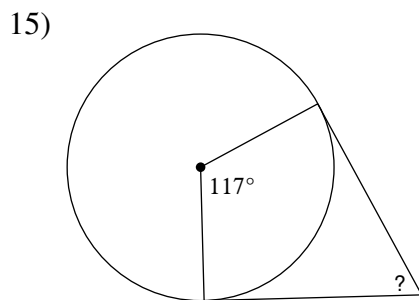
Find the angle measure indicated. Assume that lines which appear to be tangent are tangent.



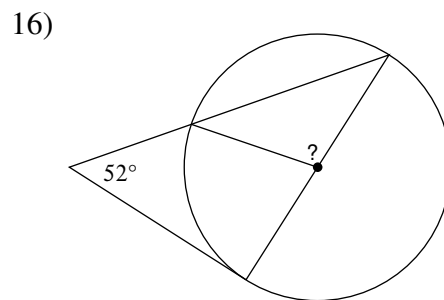
36°



88°



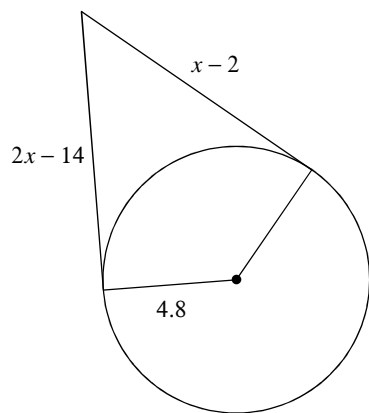
63°



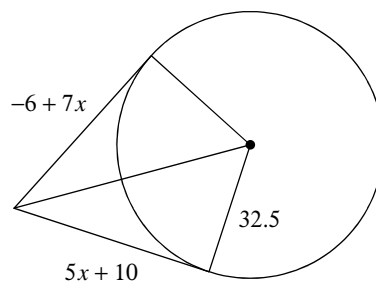
104°

Solve for x . Assume that lines which appear to be tangent are tangent.

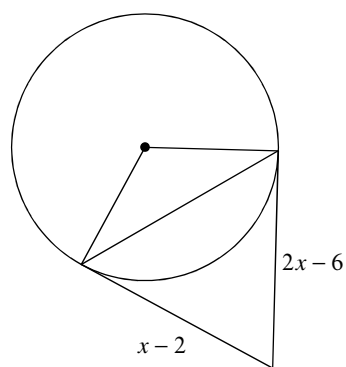
7)



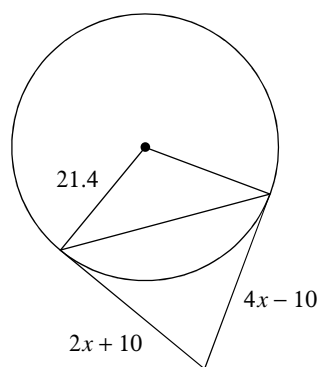
8)



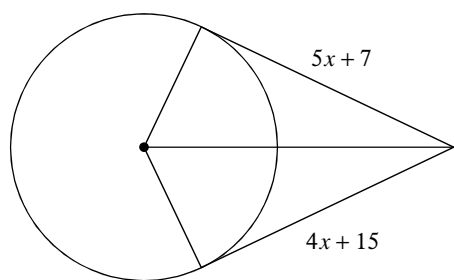
9)



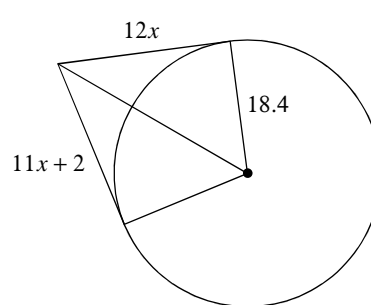
10)



11)

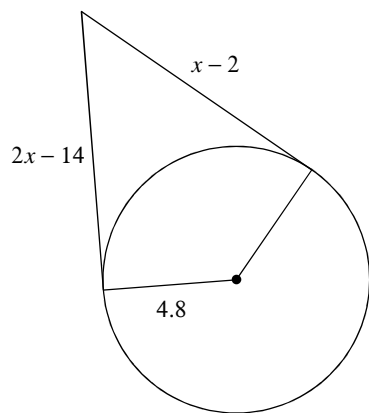


12)



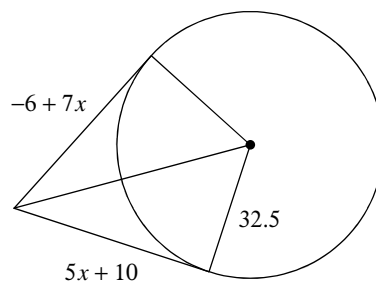
Solve for x . Assume that lines which appear to be tangent are tangent.

7)



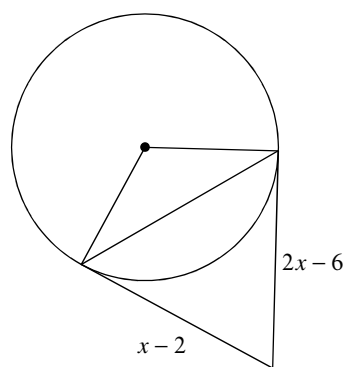
12

8)



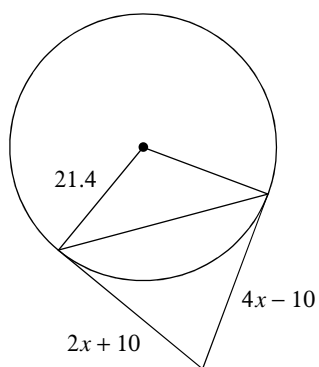
8

9)



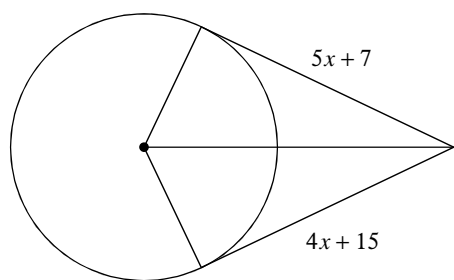
4

10)



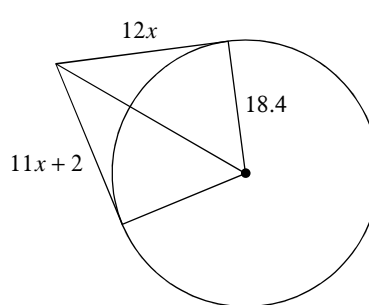
10

11)



8

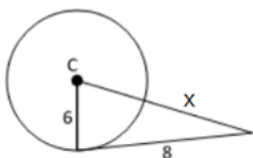
12)



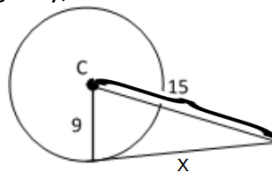
2

1) Given that the radius intersects the tangent line at the point of tangency, find the value of x for each:

a.



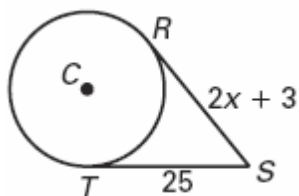
b.



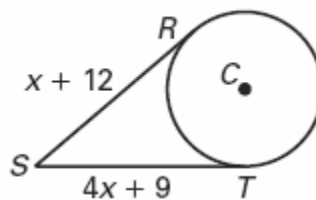
2) How can you determine if a radius and tangent line are perpendicular? Hint: Think about the problems in question 1.

3) Using Properties of Tangents $\overline{SR}$ and $\overline{ST}$ are tangent to the circle. Find the value of x .

a.

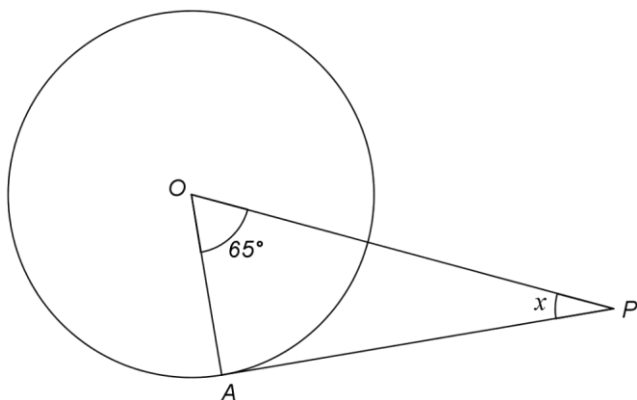


b.

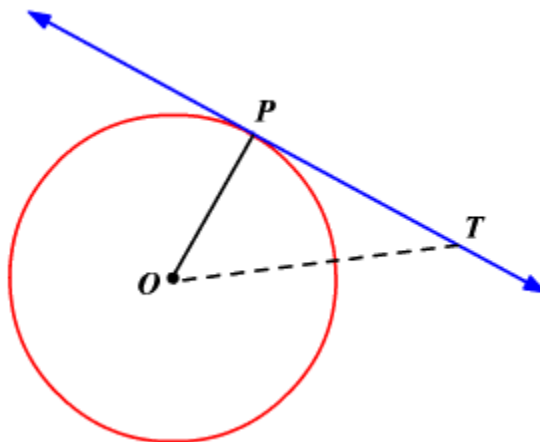


4) Find the value of the missing angle:

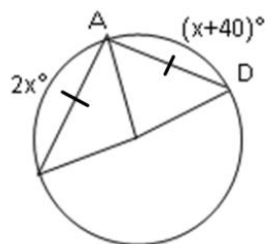
a. $x =$ _____



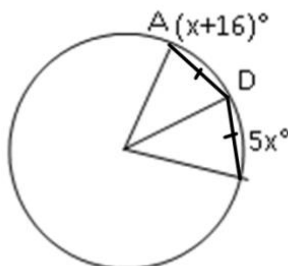
b. If $\angle T = 28^\circ$, then $\angle O =$ _____.



5) a. Find $m\widehat{AD}$

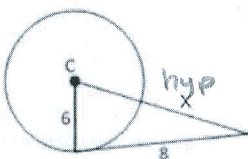


b. Find $m\widehat{AD}$



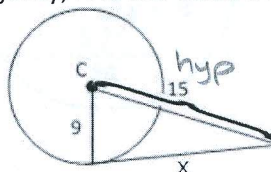
- 1) Given that the radius intersects the tangent line at the point of tangency, find the value of x for each: $a^2 + b^2 = c^2$

a.



$$\begin{aligned} 6^2 + 8^2 &= x^2 \\ 36 + 64 &= x^2 \\ 100 &= x^2 \\ \sqrt{100} &= x \\ \boxed{x=10} \end{aligned}$$

b.



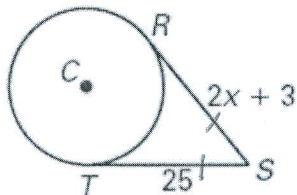
$$\begin{aligned} x^2 + 9^2 &= 15^2 \\ x^2 + 81 &= 225 \\ -81 \quad -81 \\ \hline x^2 &= 144 \\ \sqrt{144} &= x \\ \boxed{x=12} \end{aligned}$$

- 2) How can you determine if a radius and tangent line are perpendicular? Hint: Think about the problems in question 1.

Plug the #s into pythagorean theorem. If they work, it's perpendicular.

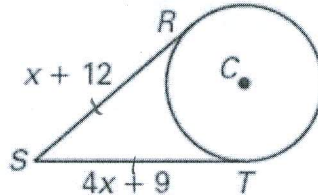
- 3) Using Properties of Tangents $\overline{SR}$ and $\overline{ST}$ are tangent to the circle. Find the value of x .

a.



$$\begin{aligned} 2x+3 &= 25 \\ -3 \quad -3 \\ \hline 2x &= 22 \\ \frac{2x}{2} &= \frac{22}{2} \\ \boxed{x=11} \end{aligned}$$

b.

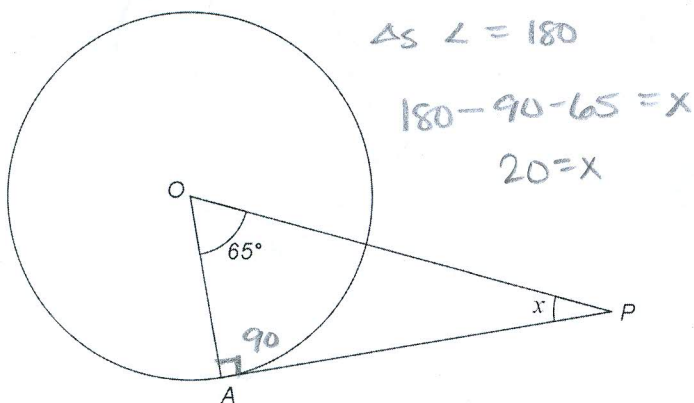


$$\begin{aligned} x+12 &= 4x+9 \\ -x \quad -x \\ \hline 12 &= 3x+9 \\ -9 \quad -9 \\ \hline 3 &= 3x \\ \frac{3}{3} &= \frac{3x}{3} \\ \boxed{1=x} \end{aligned}$$

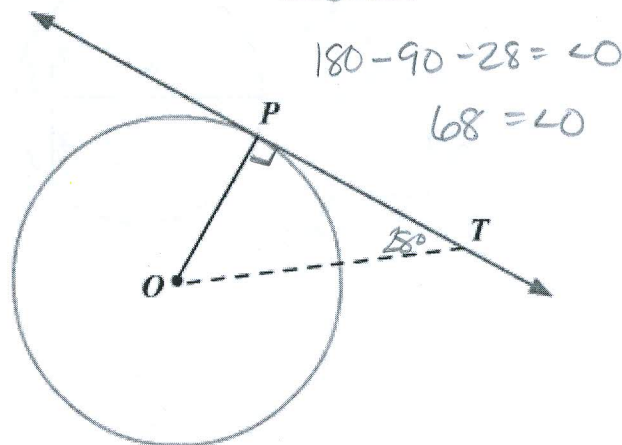
Find the value of the missing angle:

a. $x = \underline{20^\circ}$

b. If $\angle T = 28^\circ$, then $\angle O = \underline{68^\circ}$.



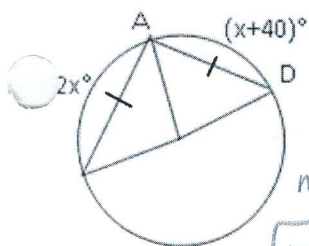
$$\begin{aligned} \Delta s \angle &= 180 \\ 180 - 90 - 65 &= x \\ 20 &= x \end{aligned}$$



$$\begin{aligned} 180 - 90 - 28 &= \angle O \\ 68 &= \angle O \end{aligned}$$

- 5) a. Find $m\widehat{AD}$

$$\begin{aligned} 2x &= x+40 \\ -x \quad -x \\ \hline x &= 40 \end{aligned}$$

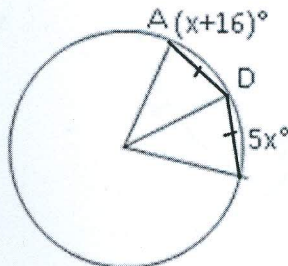


$$m\widehat{AD} = 40 + 40$$

$$\boxed{m\widehat{AD} = 80^\circ}$$

- b. Find $m\widehat{AD}$

$$\begin{aligned} x+16 &= 5x \\ -x \quad -x \\ \hline 16 &= 4x \\ \frac{16}{4} &= \frac{4x}{4} \\ 4 &= x \end{aligned}$$



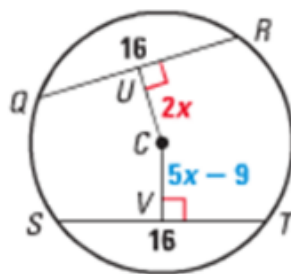
$$m\widehat{AD} = 4 + 16$$

$$\boxed{m\widehat{AD} = 20^\circ}$$

6) In the diagram of Circle C, $QR = ST = 16$. Find CU and TV.

CU = _____

TV = _____



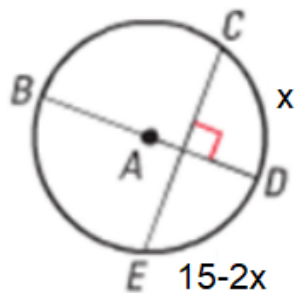
7) Find the measure of the indicated values in the diagram.

a) $x =$

b) $\widehat{CD}$

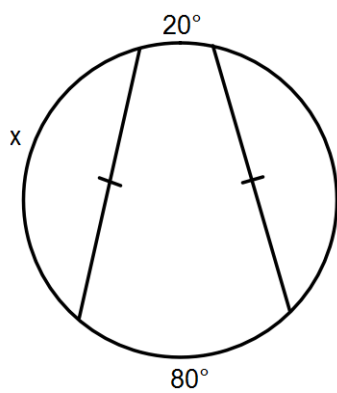
c) $\widehat{DE}$

d) $\widehat{CE}$

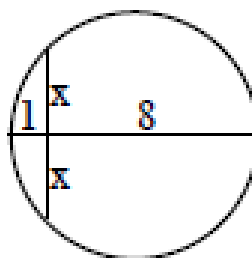


8) Solve for x

a)



b)



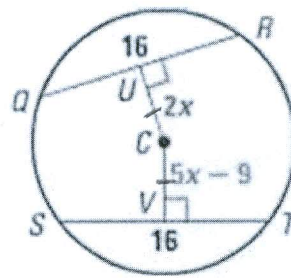
6) In the diagram of Circle C, $QR = ST = 16$. Find CU and TV.

CU = 6

$$CU = 2x \\ = 2(3) \\ = 6$$

TV = 8

$$TV = \frac{1}{2}(ST) \\ = \frac{1}{2}(16) \\ = 8$$



$$\begin{array}{r} 2x = 5x - 9 \\ -5x \quad -5x \\ \hline -3x = -9 \\ \frac{-3x}{-3} = \frac{-9}{-3} \\ x = 3 \end{array}$$

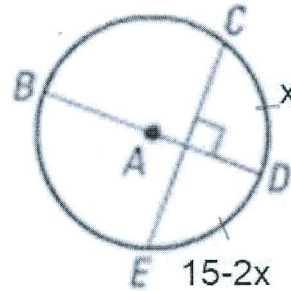
7) Find the measure of the indicated values in the diagram.

a) $x = 5$

b) $\widehat{CD} = 5$

c) $\widehat{DE} = 5$
 $= 15 - 2(5)$
 $= 15 - 10$
 $= 5$

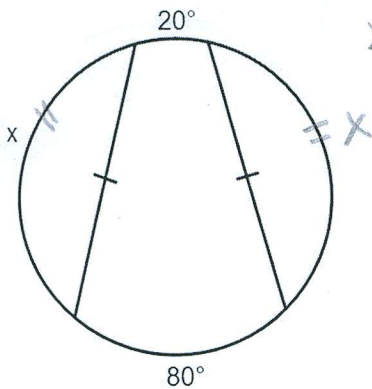
d) $\widehat{CE} = 10$
 $\widehat{CD} + \widehat{DE} = \widehat{CE}$
 $5 + 5 = 10$



$$\begin{array}{r} x = 15 - 2x \\ +2x \quad +2x \\ \hline 3x = 15 \\ \frac{3x}{3} = \frac{15}{3} \\ x = 5 \end{array}$$

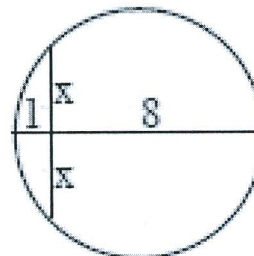
8) Solve for x

a)



$x + 20 + x + 80 = 360$ b)

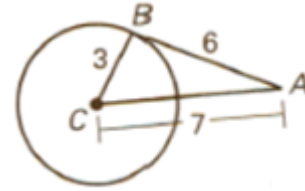
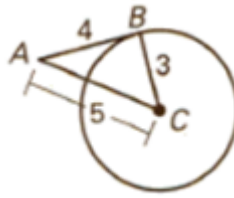
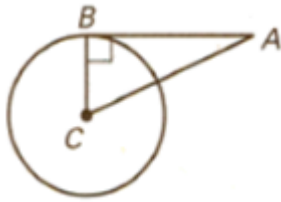
$$\begin{array}{r} 2x + 100 = 360 \\ -100 \quad -100 \\ \hline 2x = 260 \\ \frac{2x}{2} = \frac{260}{2} \\ x = 130 \end{array}$$



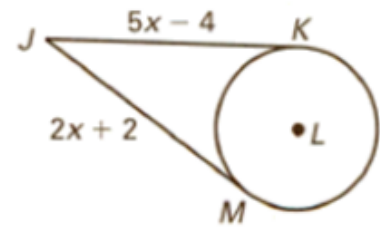
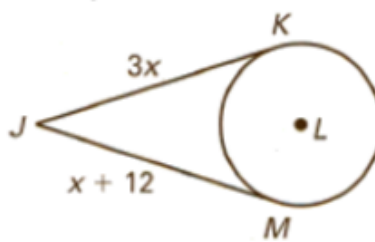
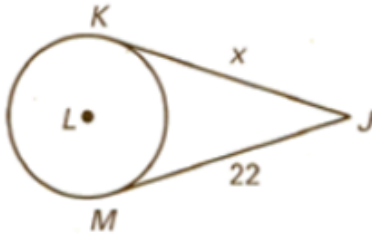
$$\begin{array}{l} x(x) = 1(8) \\ x^2 = 8 \\ x = \sqrt{8} \\ x = 2\sqrt{2} \end{array}$$

Tangents and Chords WS

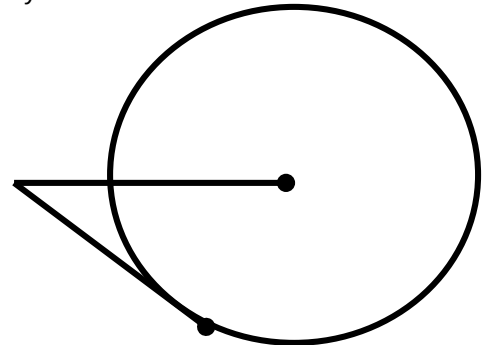
1. In each diagram, BC is a radius of circle C . Determine whether AB is tangent to circle C and explain your reasoning.



2. JK is tangent to circle L at point K and JM is tangent to circle L at point M . Find the value of x .



3. The spider crabs at the Chattanooga Aquarium are housed in a circular tank. While I am standing 4 feet away from the glass tank, a friend of mine measures the distance from me to a point of tangency of the tank to be 10 feet. What is the diameter of the tank?



4. Use the figure to match the chord or arc with the congruent chord or arc (matching).

_____ $\widehat{FB}$

_____ $\overline{AF}$

_____ $\widehat{BC}$

_____ $\overline{EC}$

_____ $\widehat{DC}$

_____ $\overline{PD}$

A. $\widehat{FE}$

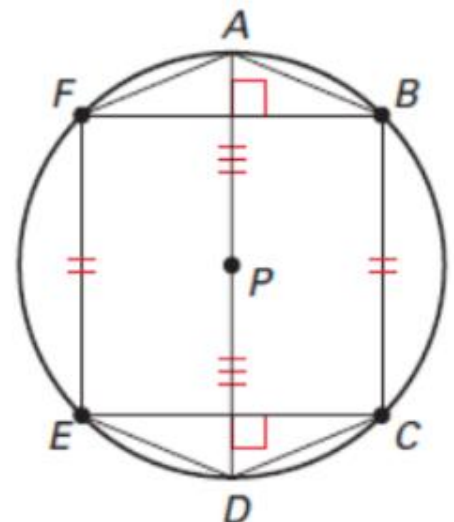
B. $\widehat{ED}$

C. $\widehat{EC}$

D. $\overline{AB}$

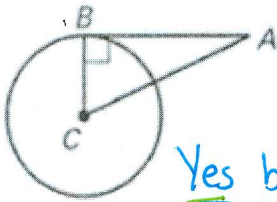
E. $\overline{BF}$

F. $\overline{PA}$

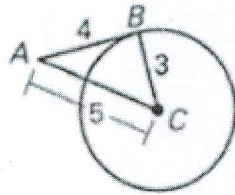


Key

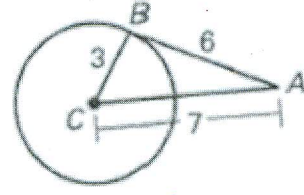
1. In each diagram, BC is a radius of circle C . Determine whether AB is tangent to circle C and explain your reasoning.



Yes because
 $\overline{AB} \perp \overline{BC}$

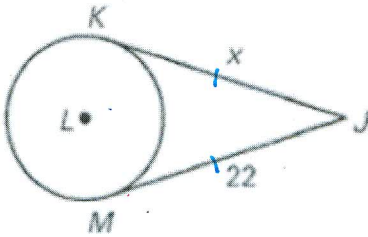


$5^2 \stackrel{?}{=} 3^2 + 4^2$
 $25 = 25 \checkmark$
Yes, $\overline{AB}$ is tangent
to circle C .

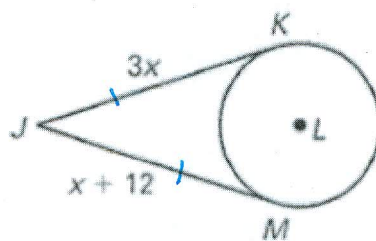


$7^2 \stackrel{?}{=} 3^2 + 6^2$
 $49 \neq 45$
No, $\overline{AB}$ is not
tangent to circle C .

2. JK is tangent to circle L at point K and JM is tangent to circle L at point M . Find the value of x .



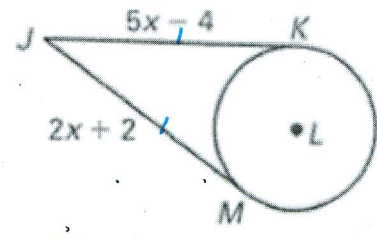
$$x = 22$$



$$3x = x + 12$$

$$2x = 12$$

$$x = 6$$



$$5x - 4 = 2x + 2$$

$$3x = 6$$

$$x = 2$$

3. Use the figure to match the chord or arc with the congruent chord or arc (matching).

C $\widehat{FB}$

D $\overline{AF}$

A $\widehat{BC}$

E $\overline{EC}$

B $\widehat{DC}$

F $\overline{PD}$

A. $\widehat{FE}$

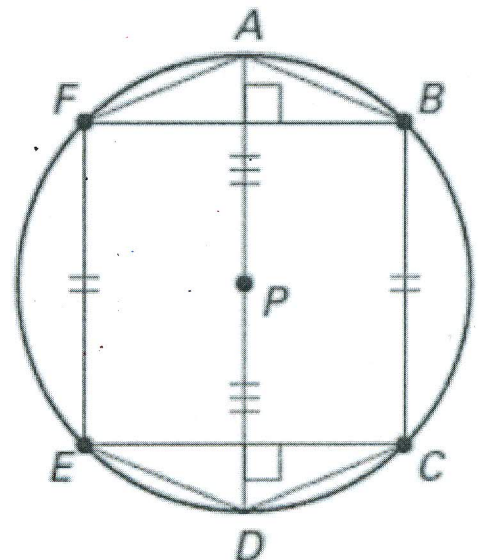
B. $\widehat{ED}$

C. $\widehat{EC}$

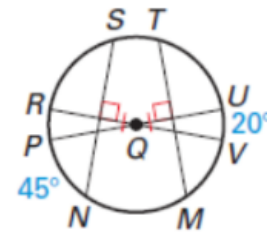
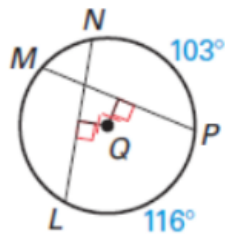
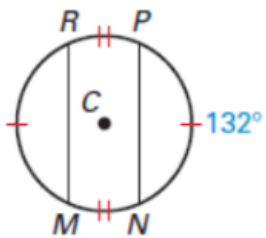
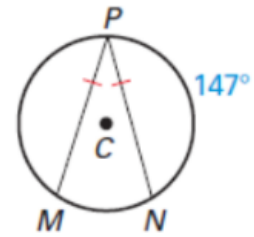
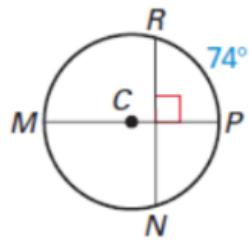
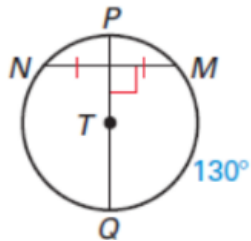
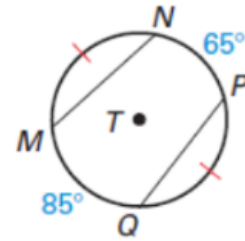
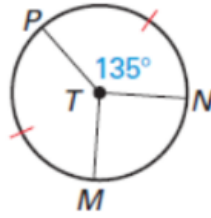
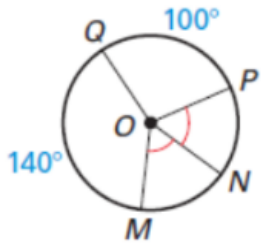
D. $\overline{AB}$

E. $\overline{BF}$

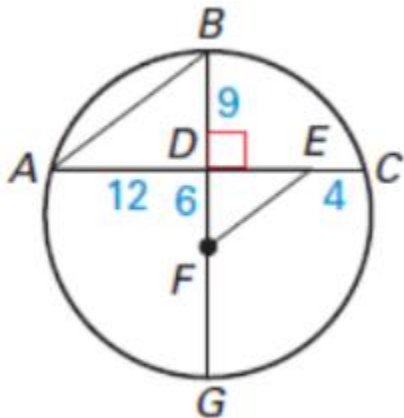
F. $\overline{PA}$



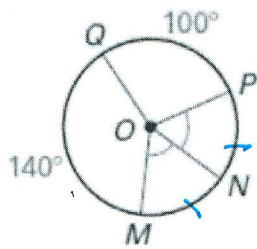
5. Find the measure of $\widehat{MN}$.



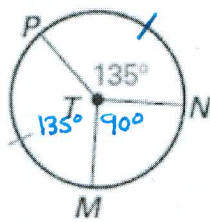
6. In circle F, BG is perpendicular to AC . Explain why $\triangle ABD \sim \triangle EDF$



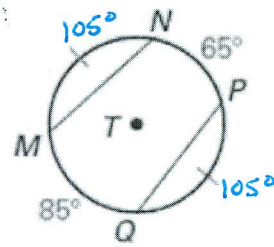
4. Find the measure of $\widehat{MN}$.



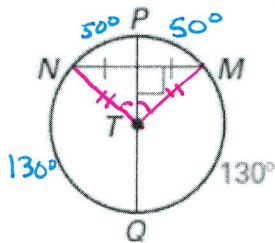
$$\widehat{MN} = 60^\circ$$



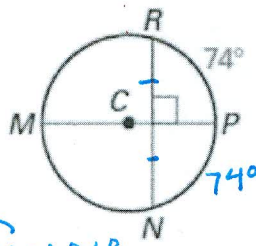
$$\widehat{MN} = 90^\circ$$



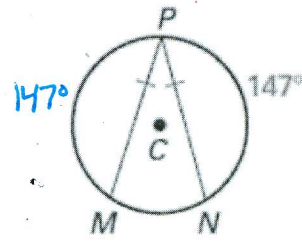
$$\widehat{MN} = 105^\circ$$



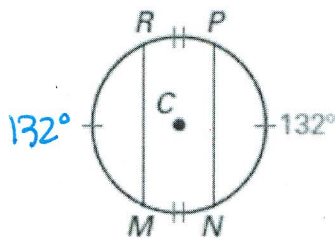
$$\widehat{MN} = 100^\circ$$



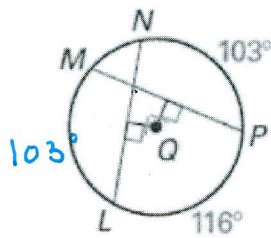
$$\widehat{MN} = 106^\circ$$



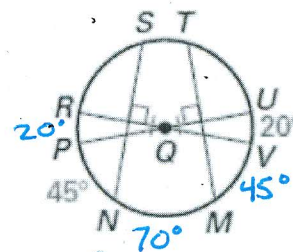
$$\widehat{MN} = 66^\circ$$



$$\widehat{MN} = 48^\circ$$

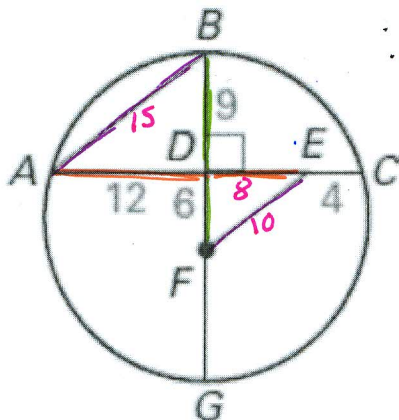


$$\widehat{MN} = 38^\circ$$



$$\widehat{MN} = 70^\circ$$

5. In circle F, BG is perpendicular to AC . Explain why $\triangle ABD \sim \triangle EDF$



$$\frac{9}{6} = \frac{3}{2}$$

$$\frac{12}{8} = \frac{3}{2}$$

$$\frac{15}{10} = \frac{3}{2}$$

$\triangle ABD \sim \triangle EDF$
by SSS~

TEST - Dr Ahn Math

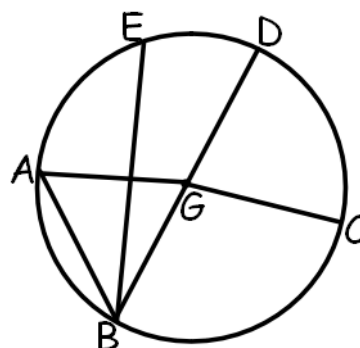
Geometry

Central and Inscribed Angles WS

Name _____

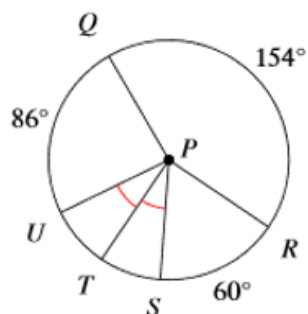
Date _____ Period _____

1. If $m\angle DGC = 62^\circ$, what is the $m\widehat{DC}$?
2. If $m\widehat{AE} = 48^\circ$, what is $m\angle ABE$?
3. If $m\widehat{ACB} = 323^\circ$, what is $m\angle AGB$?
4. If $m\angle EBD = 27^\circ$, what is $m\widehat{ED}$?

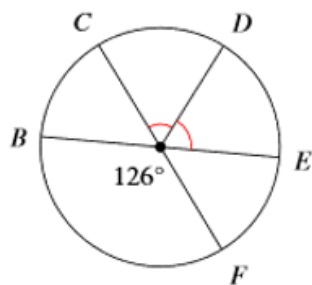


Find the indicated measurements.

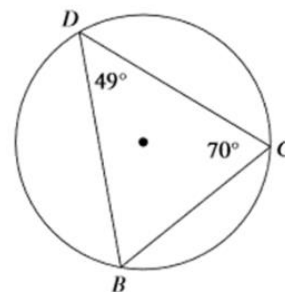
5. $m\angle SPQ$



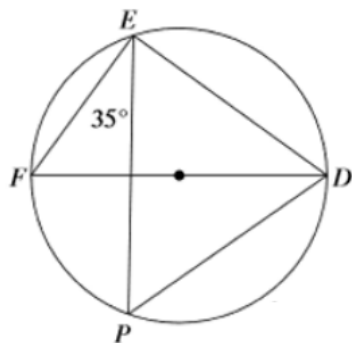
6. $m\widehat{EFC}$



7. $m\widehat{DC}$



8. $m\widehat{PD}$



Geometry

Central and Inscribed Angles WS

• Central $\angle$'s = intercepted arc
 • Inscribed $\angle$'s = $\frac{1}{2}$ Intercepted arc
 $\hookrightarrow 2(\text{Inscribed } \angle\text{'s}) = \text{arc}$

Name Key

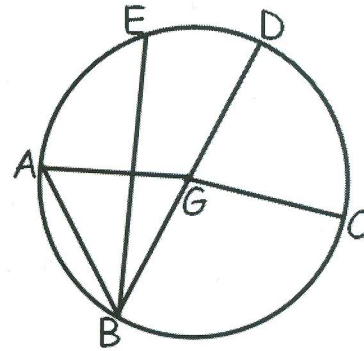
Date _____ Period _____

1. If $m\angle DGC = 62^\circ$, what is the $m\widehat{DC}$? 62°

2. If $m\widehat{AE} = 48^\circ$, what is $m\angle ABE$? 24°

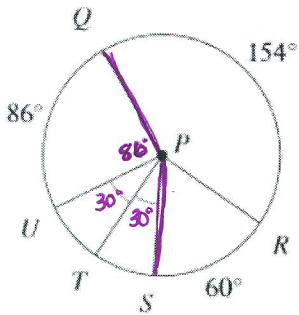
3. If $m\widehat{ACB} = 323^\circ$, what is $m\angle AGB$? 37°

4. If $m\angle EBD = 27^\circ$, what is $m\widehat{ED}$? 54°



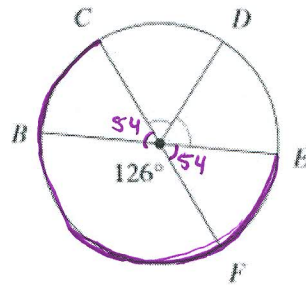
Find the indicated measurements

5. $m\angle SPQ$



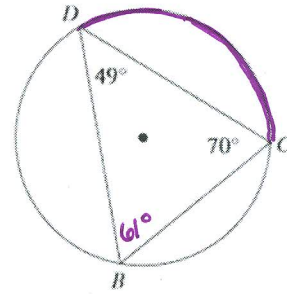
146°

6. $m\widehat{EFC}$



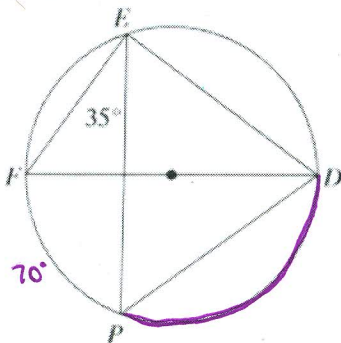
234°

7. $m\widehat{DC}$



122°

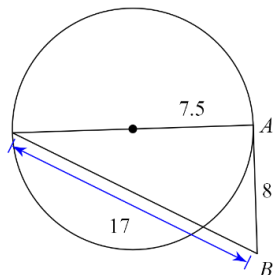
8. $m\widehat{PD}$



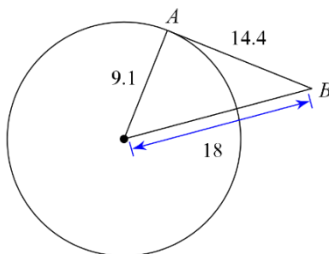
110°

WS F-Chords & Tangents Practice

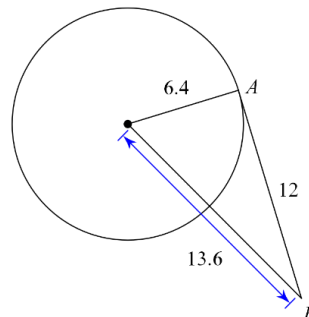
1. Determine if $\overline{AB}$ is tangent to the circle.



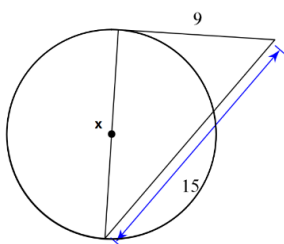
2. Determine if $\overline{AB}$ is tangent to the circle.



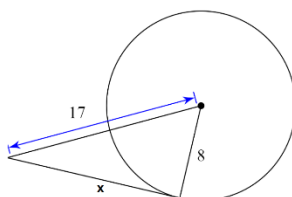
3. Determine if $\overline{AB}$ is tangent to the circle.



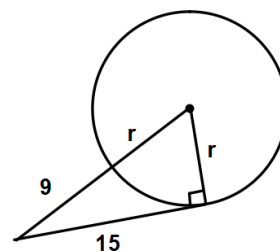
4. Find x (the diameter).



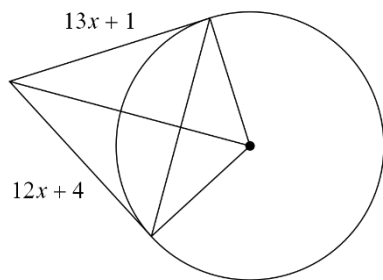
5. Find x .



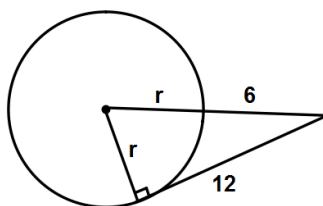
6. Find r .



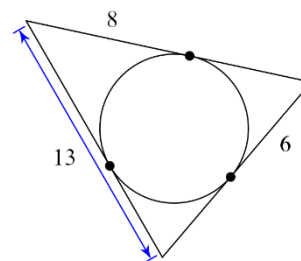
7. Find x .



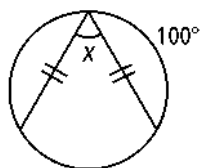
8. Find r .



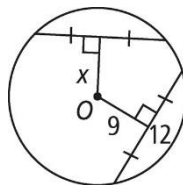
9. Find the perimeter.



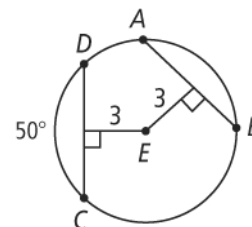
12. Find x .



13. Find x .

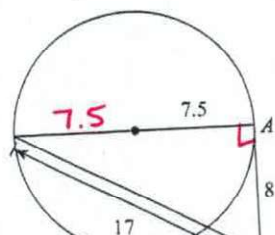


14. Find $m\widehat{AB}$.



WS C-Chords & Tangents Practice

1. Determine if
- $\overline{AB}$
- is tangent to the circle.

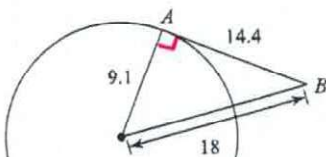


$$8^2 + 15^2 \stackrel{?}{=} 17^2$$

$$289 = 289$$

Yes

2. Determine if
- $\overline{AB}$
- is tangent to the circle.

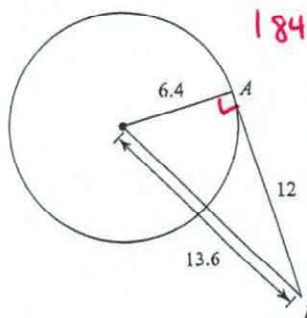


$$9.1^2 + 14.4^2 \stackrel{?}{=} 18^2$$

$$290.17 \neq 324$$

NO

3. Determine if
- $\overline{AB}$
- is tangent to the circle.

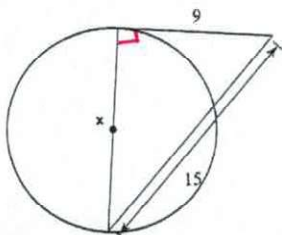


$$6.4^2 + 12^2 \stackrel{?}{=} 13.6^2$$

$$184.96 = 184.96$$

Yes

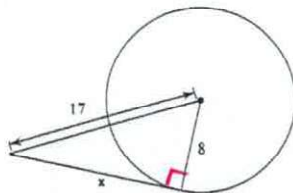
4. Find x (the diameter).



$$x^2 + 9^2 = 15^2$$

$$x = 12$$

5. Find x.

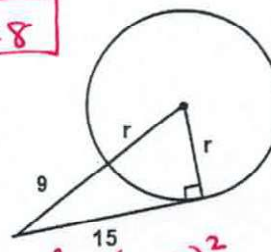


$$x^2 + 8^2 = 17^2$$

$$x = 15$$

6. Find r.

$$r = 8$$



$$r^2 + 15^2 = (r+9)^2$$

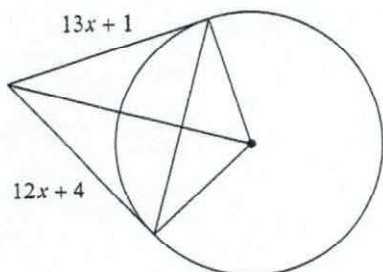
$$r^2 + 225 = r^2 + 18r + 81$$

$$144 = 18r$$

$$\frac{144}{18} = r$$

$$r = 8$$

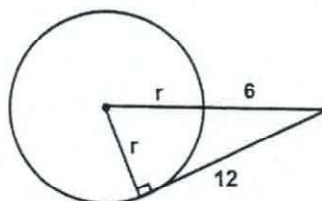
7. Find x.



$$13x+1 = 12x+4$$

$$x = 3$$

8. Find r.



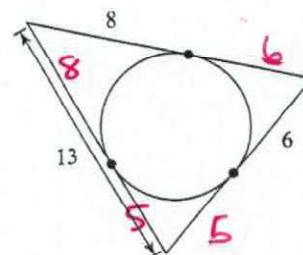
$$r^2 + 12^2 = (r+6)^2$$

$$r^2 + 144 = r^2 + 12r + 36$$

$$108 = 12r$$

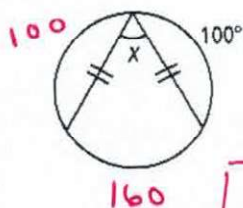
$$r = 9$$

9. Find the perimeter.



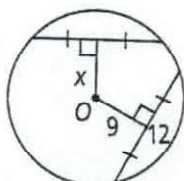
$$13 + 11 + 14 = 38 \text{ units}$$

12. Find x.



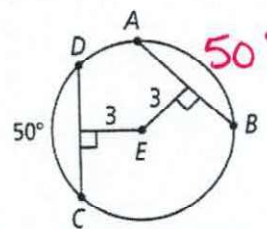
$$x = 80$$

13. Find x.



$$x = 9$$

14. Find
- $m\widehat{AB}$
- .



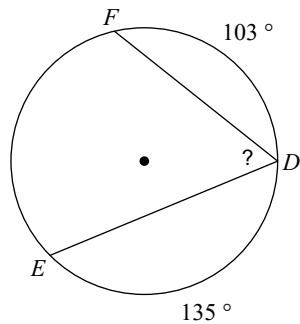
Geometry Homework

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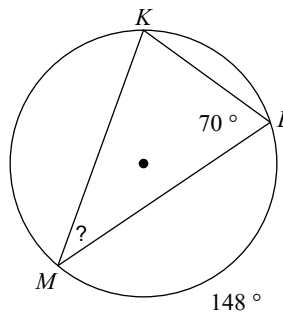
Circles and Inscribed Angles 2 (CAIA2)

Find the measure of the arc or angle indicated.

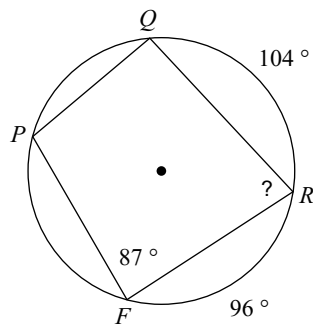
1)



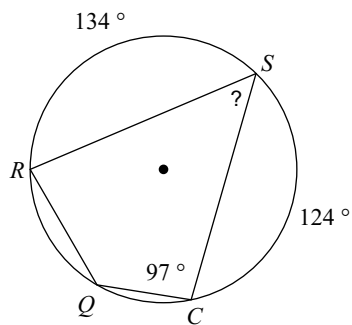
2)



3)

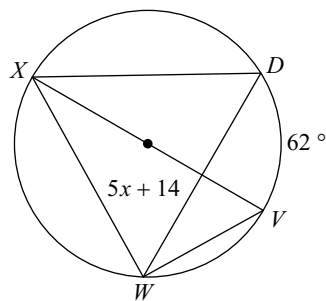


4)

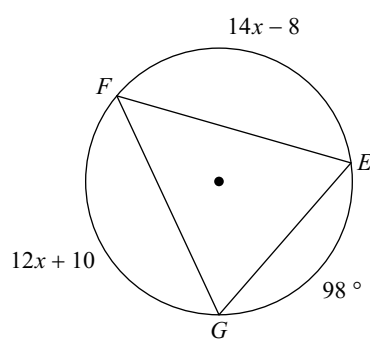


Solve for x .

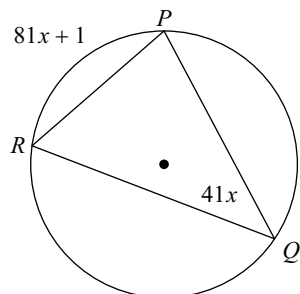
5)



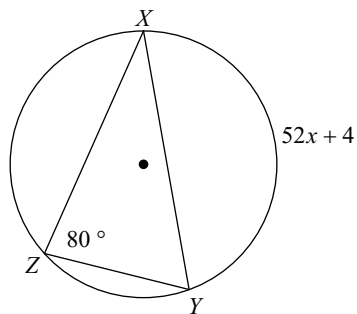
6)



7)

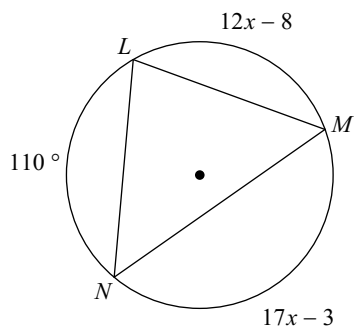


8)

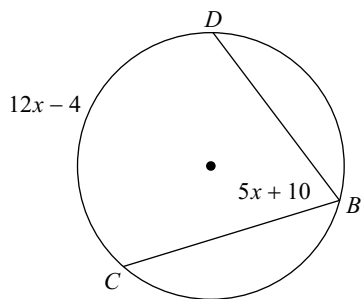


Find the measure of the arc or angle indicated.

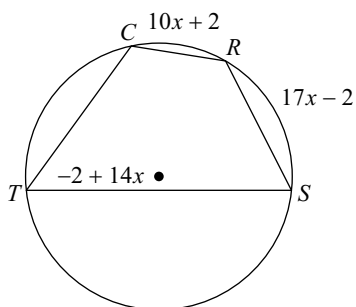
9) Find $m\angle NLM$



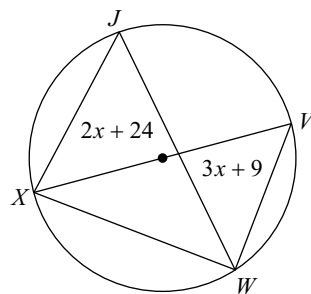
10) Find $m\angle CBD$



11) Find $m\widehat{CR}$



12) Find $m\angle WJX$



Answers to Circles and Inscribed Angles 2 (CAIA2)

1) 61°

2) 36°

3) 80°

4) 51°

5) 9

6) 10

7) 1

8) 3

9) 75°

10) 70°

11) 42°

12) 54°