

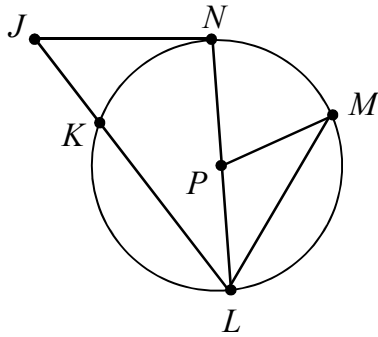
# Unit 10 Test Study Guide (Circles)

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Block: \_\_\_\_\_

## Topic 1: Parts of Circles

1. Using the diagram below, give an example of each circle part.



a. Center: \_\_\_\_\_

g. Central Angle: \_\_\_\_\_

b. Radius: \_\_\_\_\_

h. Inscribed Angle: \_\_\_\_\_

c. Diameter: \_\_\_\_\_

i. Minor Arc: \_\_\_\_\_

d. Chord: \_\_\_\_\_

j. Major Arc: \_\_\_\_\_

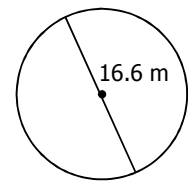
e. Secant: \_\_\_\_\_

k. Semicircle: \_\_\_\_\_

f. Tangent: \_\_\_\_\_

## Topic 2: Area & Circumference

2. Find the area and circumference of the circle to the right.



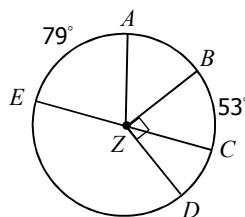
3. Find the radius of a circle with a circumference of 106.81 centimeters.

4. Find the diameter of a circle with an area of 95.03 square feet.

5. Find the circumference of a circle with an area of 254.47 square inches.

## Topic 3: Central Angles

6. Find each arc measure.



a)  $m\widehat{CD} =$  \_\_\_\_\_

d)  $m\widehat{EB} =$  \_\_\_\_\_

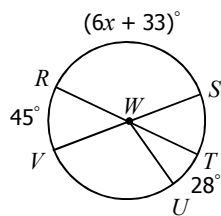
b)  $m\widehat{AB} =$  \_\_\_\_\_

e)  $m\widehat{BDE} =$  \_\_\_\_\_

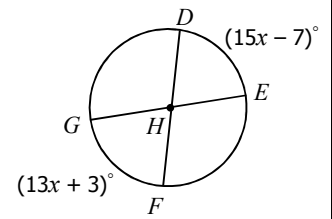
c)  $m\widehat{ED} =$  \_\_\_\_\_

f)  $m\widehat{DEC} =$  \_\_\_\_\_

7. Solve for  $x$ .

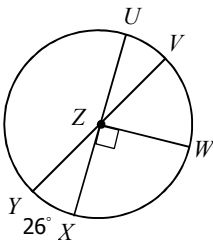


8. Find  $m\widehat{EF}$ .



**Topic 4: Arc Lengths**

If the circle below has a radius of 15 cm, find each arc length.

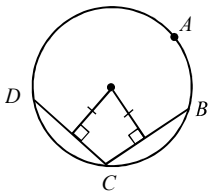


9.  $\widehat{VW}$

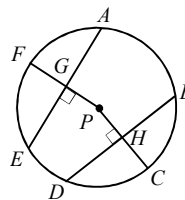
10.  $\widehat{UXV}$

**Topic 5: Chords & Arcs**

11. If  $m\widehat{DC} = (12x + 7)^\circ$  and  $m\widehat{CB} = (18x - 23)^\circ$ , find  $m\widehat{DAB}$ .



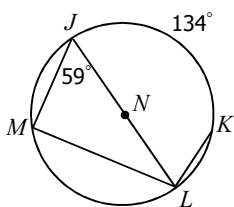
12. If  $GP = PH$ ,  $GA = 17$ ,  $m\widehat{ED} = 37^\circ$ , and  $m\widehat{AB} = 87^\circ$ , find each measure.



- $DB = \underline{\hspace{2cm}}$
- $EG = \underline{\hspace{2cm}}$
- $m\widehat{DB} = \underline{\hspace{2cm}}$
- $m\widehat{FA} = \underline{\hspace{2cm}}$
- $m\widehat{DC} = \underline{\hspace{2cm}}$

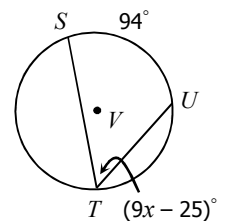
**Topic 6: Inscribed Angles**

13. Find each measure.

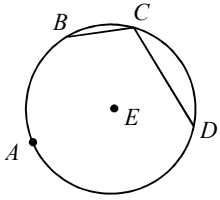


- a)  $m\widehat{ML} = \underline{\hspace{2cm}}$
- b)  $m\angle JLK = \underline{\hspace{2cm}}$
- c)  $m\angle JLM = \underline{\hspace{2cm}}$
- d)  $m\widehat{MJ} = \underline{\hspace{2cm}}$

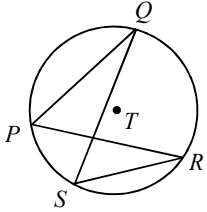
14. Solve for  $x$ .



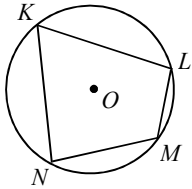
15. If  $m\angle BCD = (7x + 10)^\circ$  and  $m\widehat{BAD} = (19x - 50)^\circ$ , find  $m\widehat{BAD}$ .



16. If  $m\angle PQS = (6x + 1)^\circ$  and  $m\angle PRS = (34 - 5x)^\circ$ , find  $m\widehat{PS}$ .



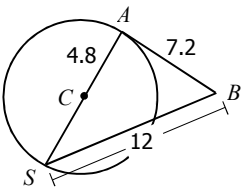
17. If  $m\angle K = (8x - 19)^\circ$  and  $m\angle M = (5x + 43)^\circ$ , find  $m\angle M$ .



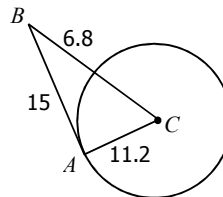
### Topic 7: Tangents

For questions 18-19, determine if  $\overline{AB}$  is tangent to circle C.

18.

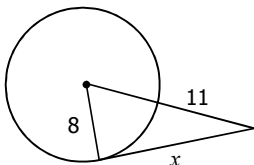


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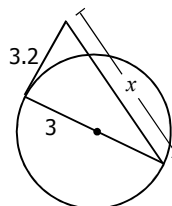


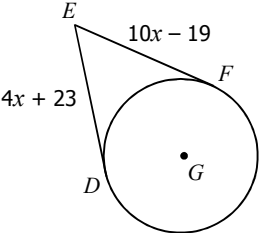
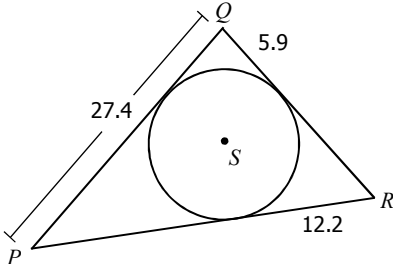
For questions 20-21, solve for  $x$ . Assume segments that appear to be tangent are tangent.

20.

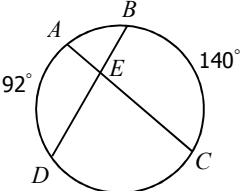
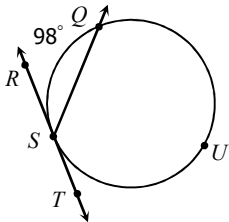
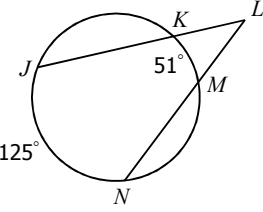
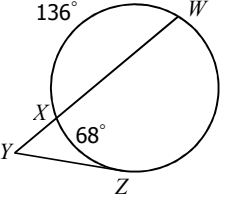
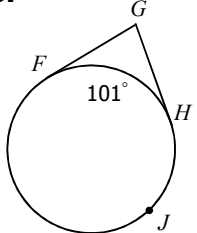
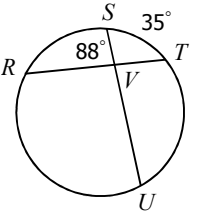
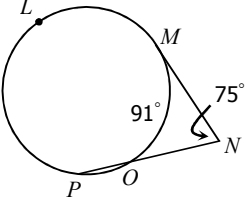
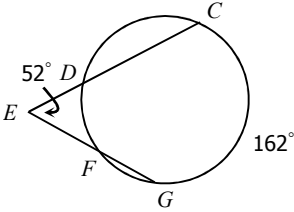


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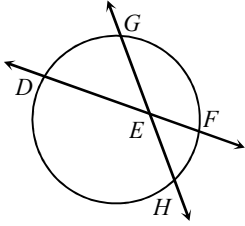


<p><b>22.</b> If <math>\overline{DE}</math> and <math>\overline{EF}</math> are tangent to circle <math>G</math>, find <math>EF</math>.</p> 	<p><b>23.</b> Find the perimeter of <math>\triangle PQR</math>.</p> 
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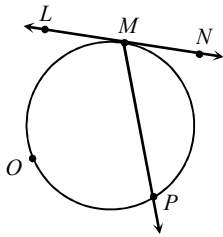
**Topic 8: Angles formed by Intersecting Chords, Secants, & Tangents**

<b>For questions 24-31, find each measure. Assume segments that appear to be tangent are tangent.</b>	
<p><b>24.</b></p>  <p style="text-align: right;"><math>m\angle AED = \underline{\hspace{2cm}}</math> <math>m\angle DEC = \underline{\hspace{2cm}}</math></p>	<p><b>25.</b></p>  <p style="text-align: right;"><math>m\angle QST = \underline{\hspace{2cm}}</math></p>
<p><b>26.</b></p>  <p style="text-align: right;"><math>m\angle KLM = \underline{\hspace{2cm}}</math></p>	<p><b>27.</b></p>  <p style="text-align: right;"><math>m\angle XYZ = \underline{\hspace{2cm}}</math></p>
<p><b>28.</b></p>  <p style="text-align: right;"><math>m\angle FGH = \underline{\hspace{2cm}}</math></p>	<p><b>29.</b></p>  <p style="text-align: right;"><math>m\widehat{RU} = \underline{\hspace{2cm}}</math></p>
<p><b>30.</b></p>  <p style="text-align: right;"><math>m\widehat{MLP} = \underline{\hspace{2cm}}</math></p>	<p><b>31.</b></p>  <p style="text-align: right;"><math>m\widehat{DF} = \underline{\hspace{2cm}}</math></p>

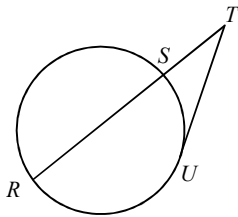
32. If  $m\widehat{DH} = (11x + 7)^\circ$ ,  $m\widehat{GF} = (5x + 9)^\circ$ , and  $m\angle GEF = (10x - 22)^\circ$ , find  $m\widehat{DH}$ .



33. If  $m\widehat{MOP} = (11x - 38)^\circ$  and  $m\angle LMP = (3x + 41)^\circ$ , find  $m\angle NMP$ .



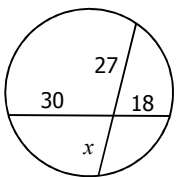
34. If  $m\widehat{RU} = (16x - 13)^\circ$ ,  $m\widehat{SU} = (11x - 24)^\circ$ , and  $m\angle STU = (3x + 1)^\circ$ , find  $m\widehat{SU}$ .



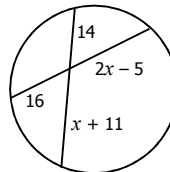
**Topic 9: Segment Lengths formed by Intersecting Chords, Secants, & Tangents**

**For questions 35-38, solve for  $x$ . Assume segments that appear to be tangent are tangent.**

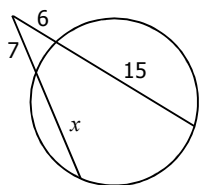
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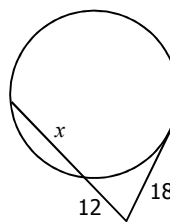
36.



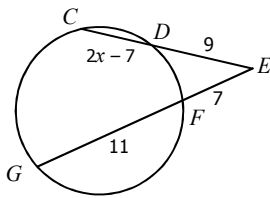
37.



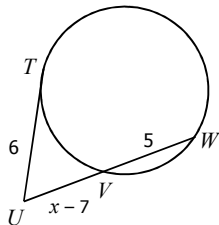
38.



39. Find  $CD$ .



40. Find  $UW$ .



**Topic 10: Equations of Circles**

**Identify the center and radius/diameter for the following circles.**

41.  $(x + 2)^2 + (y - 7)^2 = 16$                       **Center:** \_\_\_\_\_; **Radius:** \_\_\_\_\_

42.  $x^2 + y^2 = 121$                                       **Center:** \_\_\_\_\_; **Diameter:** \_\_\_\_\_

**Using the given information, write the equation of the circle.**

43. Center:  $(-3, 4)$ , Radius: 7

44. Center:  $(-9, 0)$ , Diameter: 20

45. Center:  $(-7, -1)$ , Diameter: 9

46. Center:  $(12, 5)$ , Radius:  $\sqrt{89}$

47. Center:  $(2, -2)$ , Circumference:  $12\pi$

48. Center:  $(0, 10)$ , Area:  $225\pi$

49. Center:  $(-4, 7)$ , Point on Circle:  $(-1, 9)$

50.

