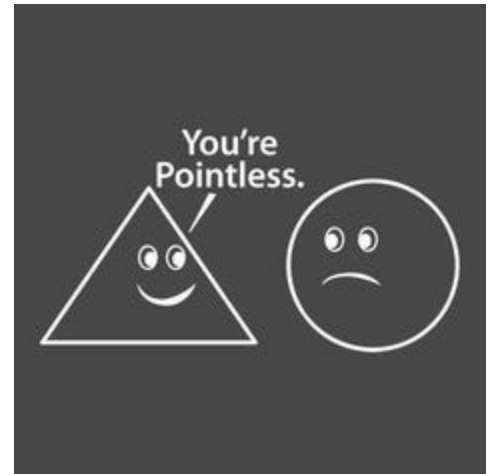


Name \_\_\_\_\_

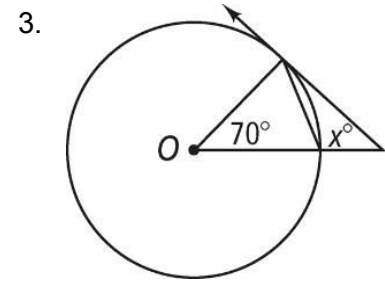
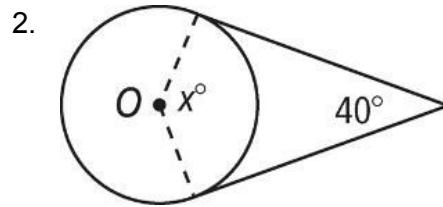
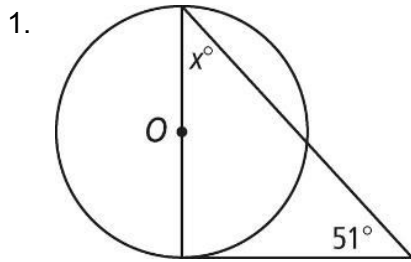
# Math 3 Honors Unit 6: Circles



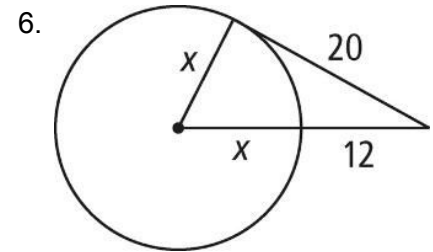
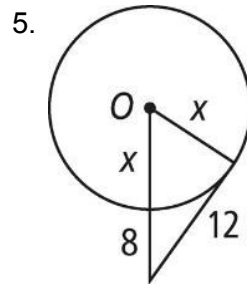
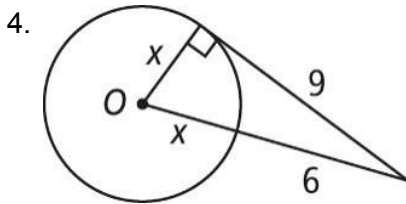
Monday	Tuesday	Wednesday	Thursday	Friday
			<b>March 28</b> <ul style="list-style-type: none"><li>• Tangent lines</li></ul> HW: worksheet 6.1	<b>March 29</b> Teacher work day - No School!
<b>April 1</b> <ul style="list-style-type: none"><li>• Chords and arcs</li></ul> HW: worksheet 6.2	<b>April 2</b> <ul style="list-style-type: none"><li>• Inscribed angles</li></ul> HW: worksheet 6.3	<b>April 3</b> <ul style="list-style-type: none"><li>• Arcs and segments</li></ul> HW: worksheet 6.4	<b>April 4</b> <ul style="list-style-type: none"><li>• Arc length and area of a sector</li></ul> HW: worksheet 6.5	<b>April 5</b> <ul style="list-style-type: none"><li>• Review for test</li></ul> HW: finish review
<b>April 8</b> <ul style="list-style-type: none"><li>• TEST!!</li></ul>				

### 6.1 – Tangents of Circles

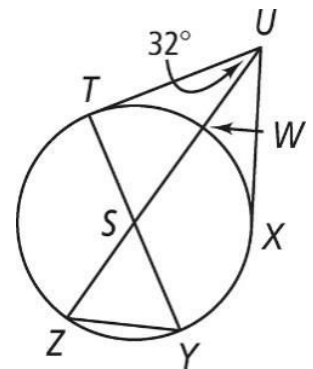
Assume that lines that appear to be tangent are tangent.  $O$  is the center of each circle. What is the value of  $x$ ?



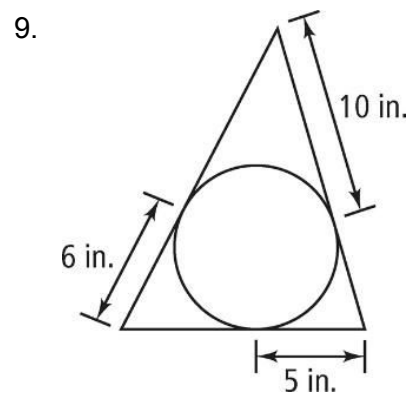
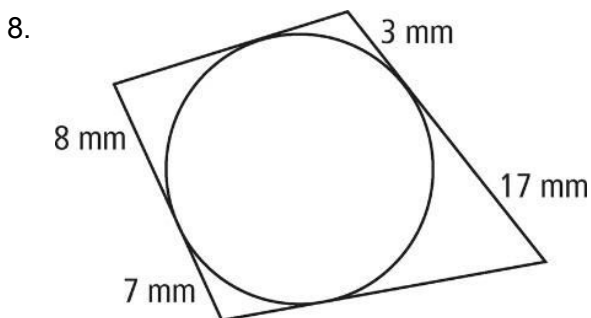
In each circle, what is the value of  $x$  to the nearest hundredth?



7.  $\overline{TY}$  and  $\overline{ZW}$  are diameters of  $\odot S$ .  $\overline{TU}$  and  $\overline{UX}$  are tangents of  $\odot S$ . What is  $m\angle SYZ$ ?



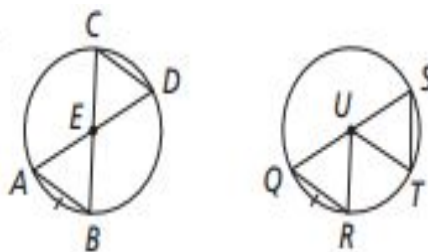
Each polygon circumscribes a circle. What is the perimeter of each polygon?



## 6.2 - Chords & Arcs of Circles

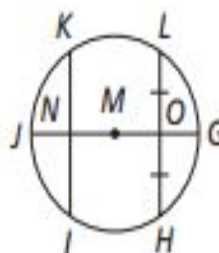
1. The circles at the right are congruent. Which conclusion can you draw?

- (A)  $\overline{CD} \cong \overline{ST}$       (C)  $\angle AEB \cong \angle QUR$   
 (B)  $\angle CED \cong \angle SUT$       (D)  $\widehat{BD} \cong \widehat{RT}$

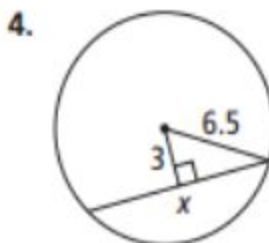
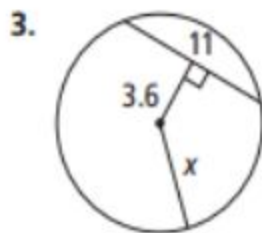


2.  $\overline{JG}$  is the diameter of  $\odot M$ . Which conclusion *cannot* be drawn from the diagram?

- (F)  $\overline{KN} \cong \overline{NI}$       (H)  $\overline{JG} \perp \overline{HL}$   
 (G)  $\widehat{LG} \cong \widehat{GH}$       (I)  $\overline{GH} \cong \overline{GL}$

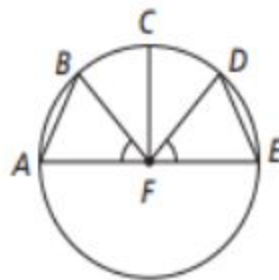


For Exercises 3 and 4, what is the value of  $x$  to the nearest tenth?



5. If  $\angle AFB \cong \angle DFE$ , what must be true?

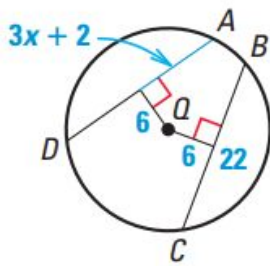
- (A)  $\widehat{AB} \cong \widehat{DE}$       (C)  $\overline{CF} \perp \overline{AE}$   
 (B)  $\widehat{BC} \cong \widehat{DE}$       (D)  $\angle BFC \cong \angle DFC$



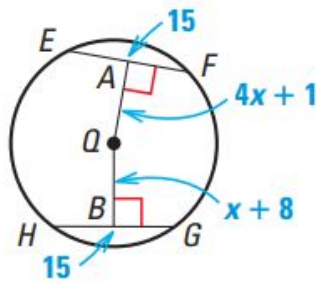
6. A student draws  $\odot X$  with a diameter of 12 cm. Inside the circle she inscribes equilateral  $\triangle ABC$  so that  $\overline{AB}$ ,  $\overline{BC}$ , and  $\overline{CA}$  are all chords of the circle. The diameter of  $\odot X$  bisects  $\overline{AB}$ . The section of the diameter from the center of the circle to where it bisects  $\overline{AB}$  is 3 cm. To the nearest whole number, what is the perimeter of the equilateral triangle inscribed in  $\odot X$ ?

Solve for the variable.

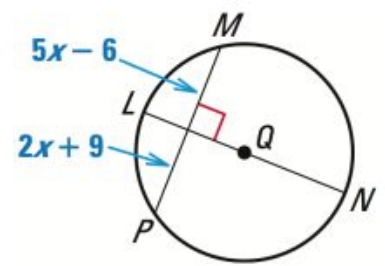
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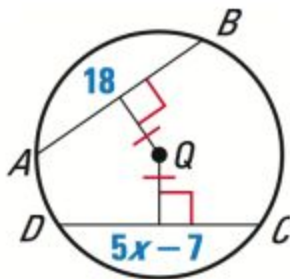
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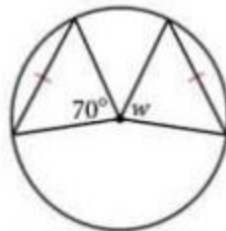
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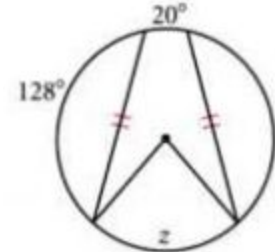
10.



11.



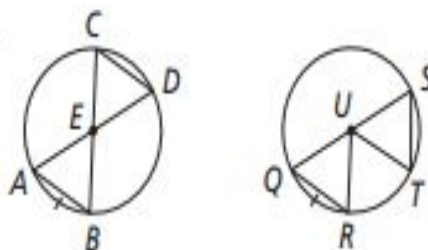
12.



## 6.2 - Chords & Arcs of Circles

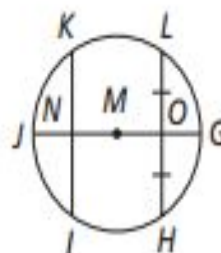
1. The circles at the right are congruent. Which conclusion can you draw?

- Ⓐ  $\overline{CD} \cong \overline{ST}$       Ⓒ  $\angle AEB \cong \angle QUR$   
 Ⓑ  $\angle CED \cong \angle SUT$       Ⓓ  $\widehat{BD} \cong \widehat{RT}$

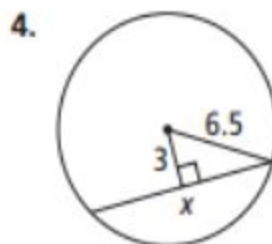
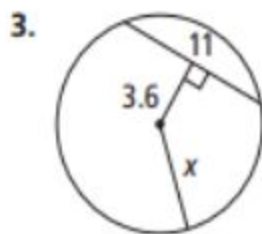


2.  $\overline{JG}$  is the diameter of  $\odot M$ . Which conclusion *cannot* be drawn from the diagram?

- Ⓕ  $\overline{KN} \cong \overline{NI}$       Ⓗ  $\overline{JG} \perp \overline{HL}$   
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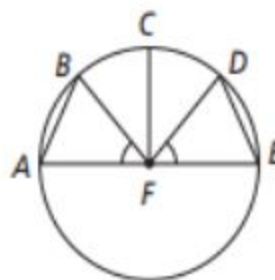


For Exercises 3 and 4, what is the value of  $x$  to the nearest tenth?



5. If  $\angle AFB \cong \angle DFE$ , what must be true?

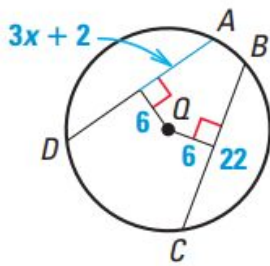
- Ⓐ  $\widehat{AB} \cong \widehat{DE}$       Ⓒ  $\overline{CF} \perp \overline{AE}$   
 Ⓑ  $\widehat{BC} \cong \widehat{DE}$       Ⓓ  $\angle BFC \cong \angle DFC$



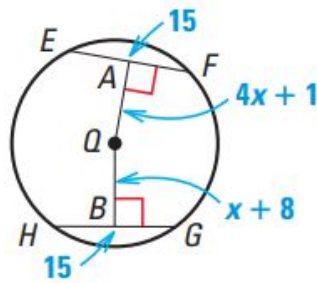
6. A student draws  $\odot X$  with a diameter of 12 cm. Inside the circle she inscribes equilateral  $\triangle ABC$  so that  $\overline{AB}$ ,  $\overline{BC}$ , and  $\overline{CA}$  are all chords of the circle. The diameter of  $\odot X$  bisects  $\overline{AB}$ . The section of the diameter from the center of the circle to where it bisects  $\overline{AB}$  is 3 cm. To the nearest whole number, what is the perimeter of the equilateral triangle inscribed in  $\odot X$ ?

Solve for the variable.

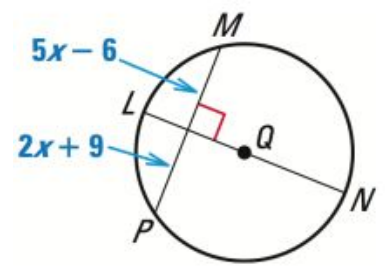
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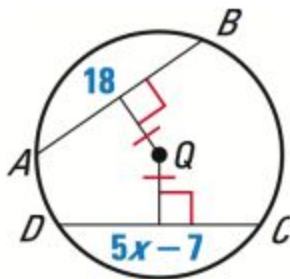
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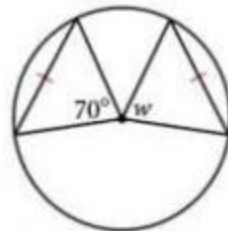
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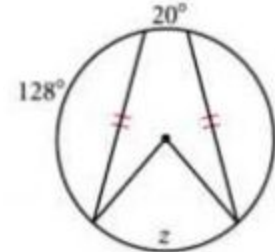
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11.

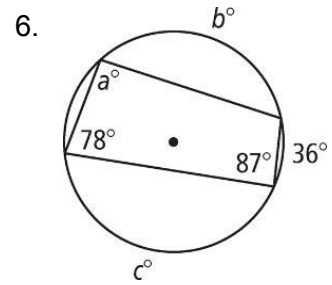
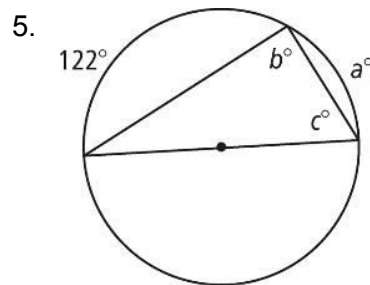
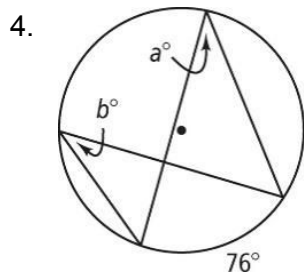
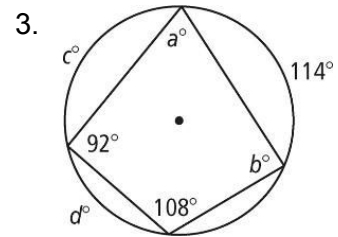
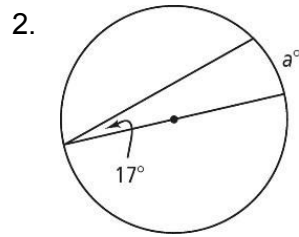
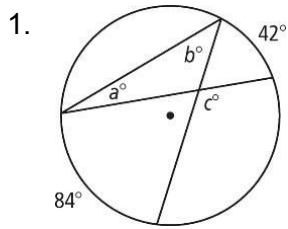


12.

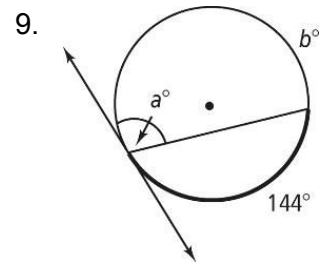
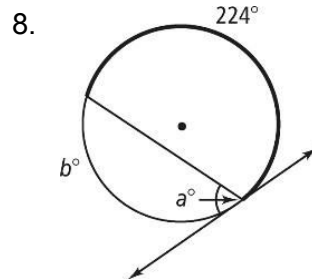
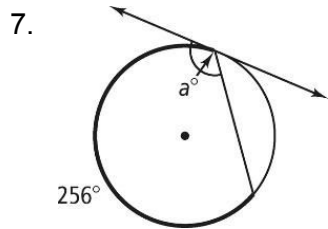


### 6.3 - Inscribed Angles

Find the value of each variable. For each circle, the dot represents the center.



Find the value of each variable. Lines that appear to be tangent are tangent.



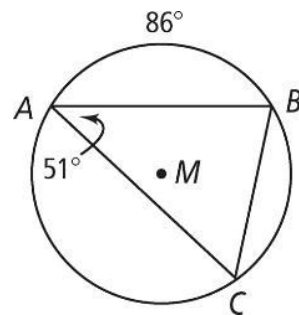
Find each indicated measure for  $\odot M$ .

10.  $m\angle B$

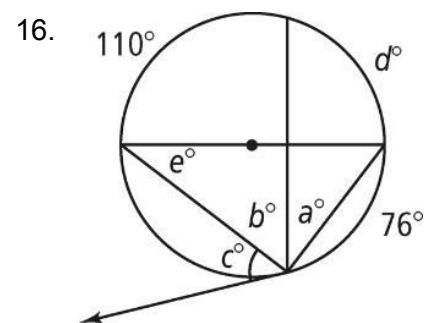
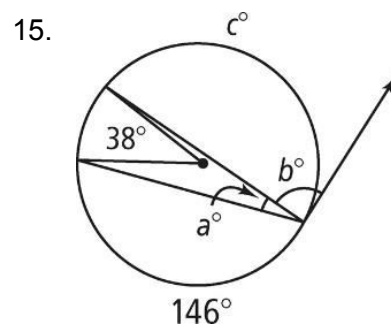
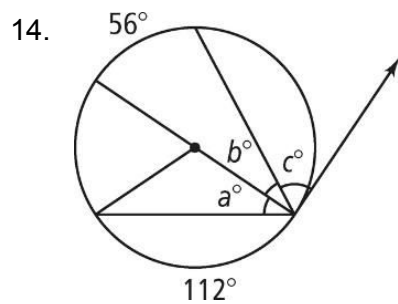
11.  $m\angle C$

12.  $m\widehat{BC}$

13.  $m\widehat{AC}$



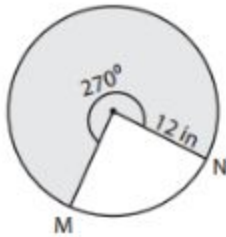
Find the value of each variable. For each circle, the dot represents the center.



### 6.5 - Arc Length and Area of a Sector

Determine the arc length and the area of a sector.

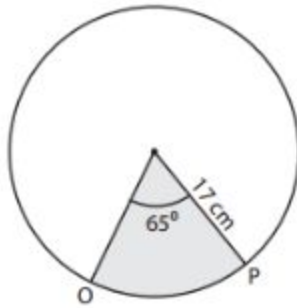
1)



Length of the arc MN = \_\_\_\_\_

Area of a sector = \_\_\_\_\_

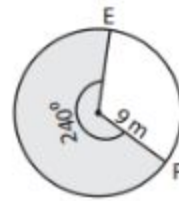
2)



Length of the arc OP = \_\_\_\_\_

Area of a sector = \_\_\_\_\_

3)



Length of the arc EF = \_\_\_\_\_

Area of a sector = \_\_\_\_\_

4. central angles =  $130^\circ$ , arc length = 14 cm  
Find radius.

5. area of sector =  $116\pi \text{ cm}^2$ , central angle =  $110^\circ$   
Find diameter.

6. arc length =  $8\pi \text{ cm}$ , radius = 20 cm  
Find central angle.

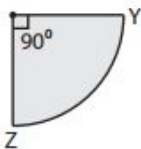
7. radius = 2 m, central angle =  $103^\circ$   
Find arc length.

8. area of sector =  $17\pi \text{ cm}^2$ , central angle =  $75^\circ$   
Find radius.

9. circumference =  $4\pi \text{ in}$ , central angle =  $87^\circ$   
Find area of sector.

Find the arc length for each sector. Round the answer to two decimal places. ( use  $\pi=3.14$  )

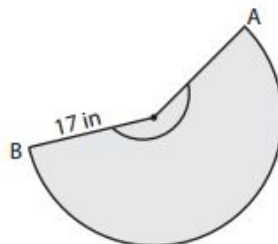
1)



Area =  $153.86 \text{ cm}^2$

Length of the arc YZ = \_\_\_\_\_

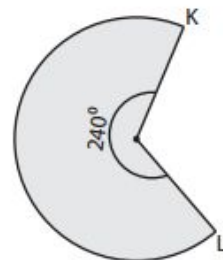
2)



Area =  $529.35 \text{ in}^2$

Length of the arc AB = \_\_\_\_\_

3)



Area =  $52.33 \text{ m}^2$

Length of the arc KL = \_\_\_\_\_