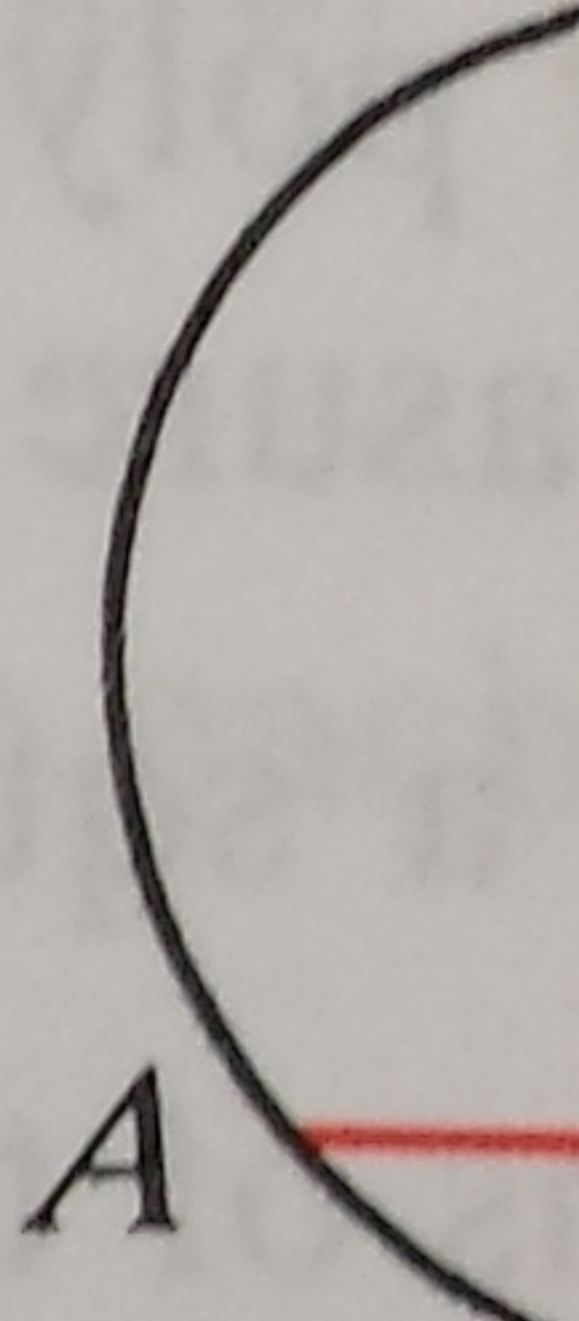


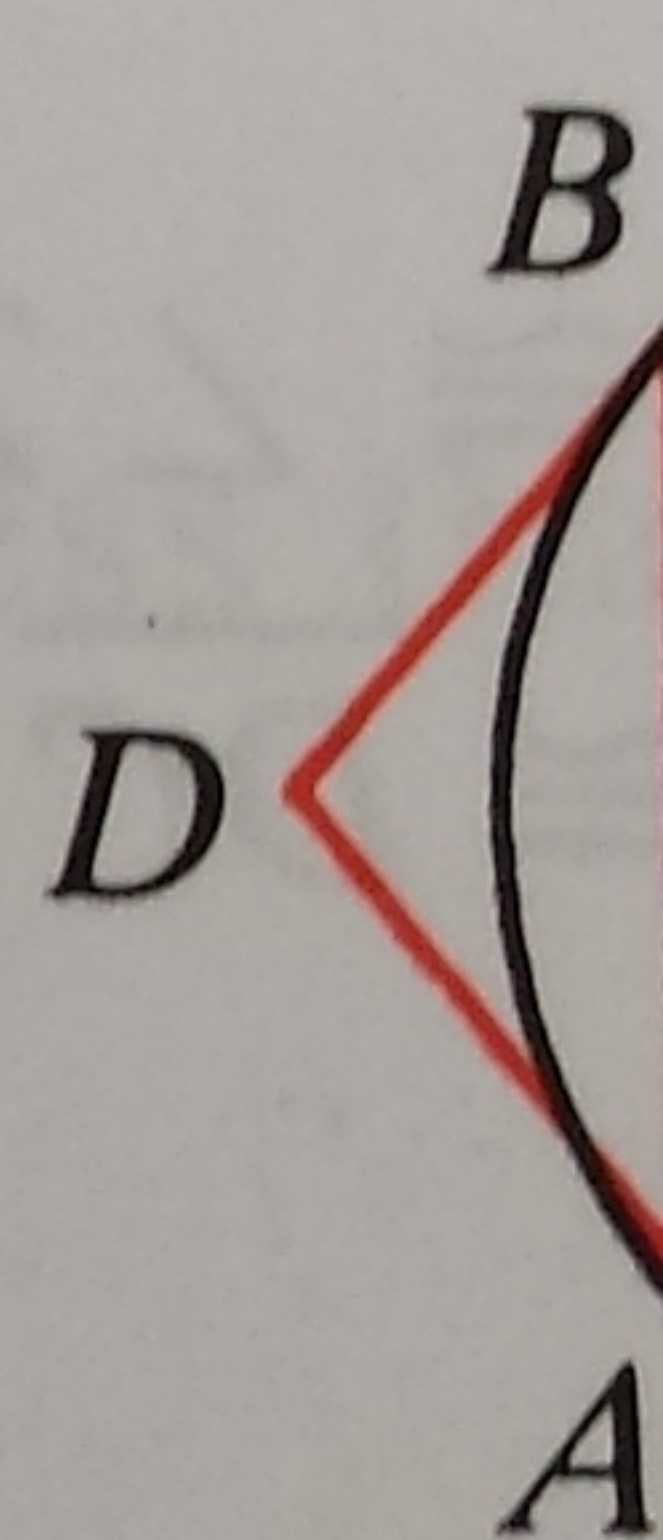
- circle. **True**
6. It is possible to draw two circles so that no common tangents can be drawn. **True**
7. An angle inscribed in a semicircle must be a right angle. **True**
8. When one chord is farther from the center of a circle than another chord, the chord farther from the center is the longer of the two chords. **True**

9. In  $\odot O$ , if  $m\widehat{AB} = 100$ , then  $m\widehat{AC} = \underline{\hspace{2cm}}$ . **130**
10. If the radius of  $\odot O$  is 17 and  $AB = 30$ , then  $OE = \underline{\hspace{2cm}}$ . **8**



$\overline{DA}$  and  $\overline{DB}$  are tangent to the circle.

11. If  $\overline{AB} \cong \overline{BC}$  and  $m\widehat{BC} = 80$ , then  $m\angle ABC = \underline{\hspace{2cm}}$ . **100**

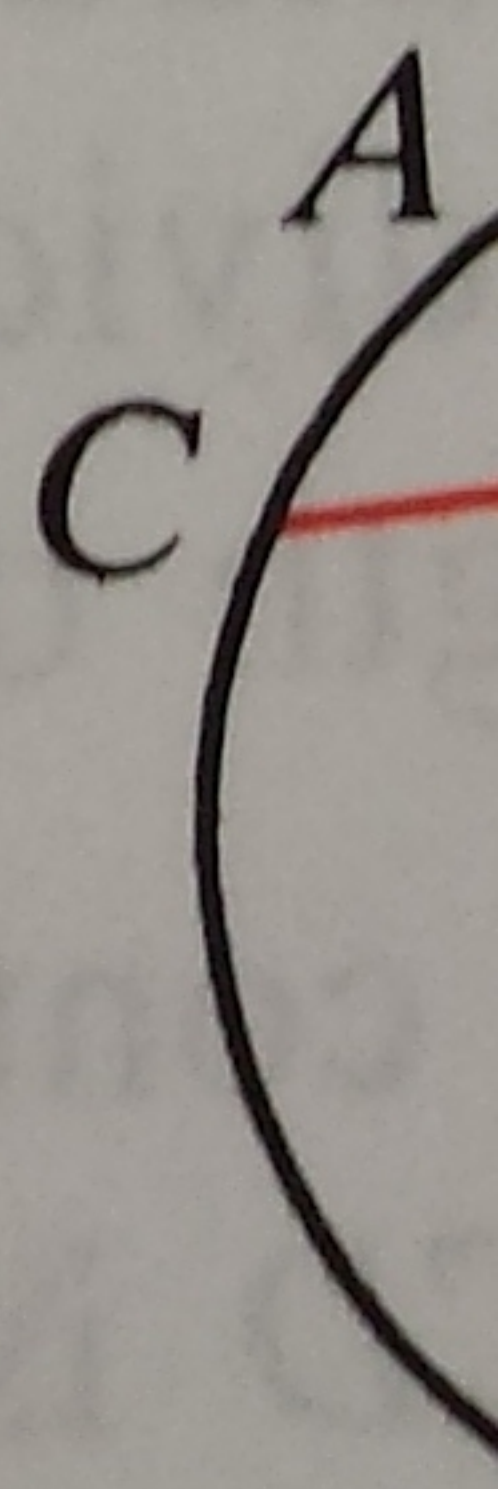


12. If  $m\angle D = 110$ , then  $m\angle BCA = \underline{\hspace{2cm}}$ . **35**

13. Given:  $m\widehat{BC} = m\widehat{AB}$

Prove:  $\overline{AC} \parallel \overline{DB}$

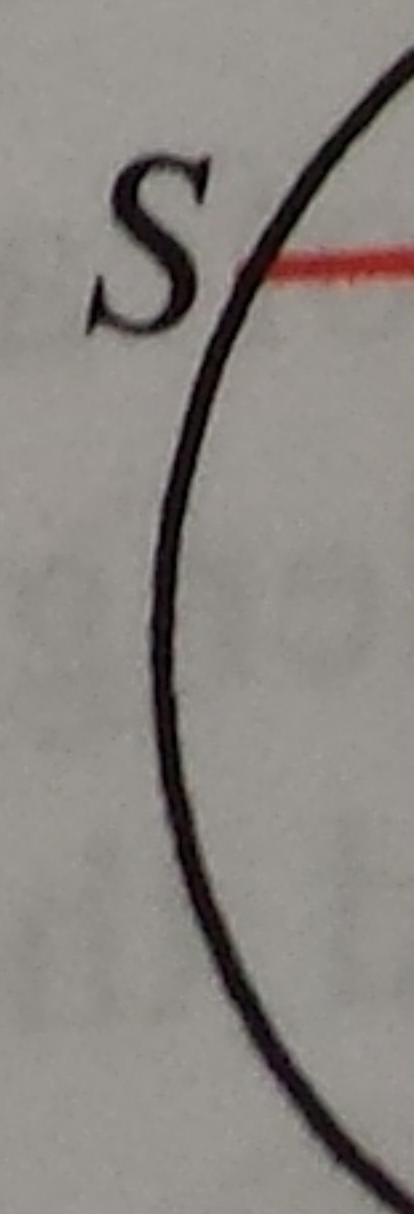
14. If  $m\widehat{AC} = 40$  and  $m\widehat{BD} = 28$ , then  $m\angle AEC = \underline{\hspace{2cm}}$ . **34**



15. If  $AE = 10$ ,  $EB = 9$ , and  $CE = 15$ , then  $ED = \underline{\hspace{2cm}}$ . **6**

$\overline{PT}$  is tangent to the circle.

16. If  $m\widehat{RS} = 120$  and  $m\widehat{ST} = 160$ , then  $m\angle P = \underline{\hspace{2cm}}$ . **40**



17. If  $PT = 12$  and  $PS = 18$ , then  $PR = \underline{\hspace{2cm}}$ . **8**

18. Given:  $\square ABCD$  is inscribed in a circle.

## Chapter 9

Indicate the best answer by writing the appropriate letter.

In Exercises 1–3,  $\overline{PT}$  is tangent to  $\odot M$  at  $T$ .

- c** 1. If  $m\angle TMA = 80$ , what is the measure of  $\widehat{TBA}$ ?  
 a. 100                      b. 80                      c. 280                      d. 145
- a** 2. If  $m\angle M = 80$ ,  $m\angle P = 50$ , what is the measure of  $\angle MAP$ ?  
 a. 140                      b. 150                      c. 160                      d. 170
- c** 3. If  $PA = 9$  and  $AB = 16$ , what does  $PT$  equal?  
 a. 12                      b.  $\frac{25}{2}$                       c. 15                      d. 20
- c** 4. Suppose  $\overline{PS}$  were drawn tangent to  $\odot M$  at point  $S$ . If  $m\angle SPT = 62$ , find  $m\widehat{ST}$ .  
 a. 62                      b. 236                      c. 118                      d. 242
- c** 5. How many common tangents can be drawn to two circles that are externally tangent?  
 a. one                      b. two                      c. three                      d. four
- c** 6. Points  $A$ ,  $B$ , and  $C$  lie on a circle in the order named.  $m\widehat{AB} = 110$  and  $m\widehat{BC} = 120$ . What is the measure of  $\angle BAC$ ?  
 a. 130                      b. 65                      c. 60                      d. 50
- a** 7. Refer to Exercise 6. If point  $D$  lies on  $\widehat{AC}$ , what is the sum of the measures of  $\angle ABC$  and  $\angle ADC$ ?  
 a. 180                      b. 170                      c. 160                      d. 150
- b** 8.  $R$  and  $S$  are points on a circle.  $\overline{RS}$  could be which of these?  
 a. radius                      b. diameter                      c. secant                      d. tangent
- b** 9. If  $m\widehat{BC} = 120$  and  $m\widehat{AD} = 50$ , what is the measure of  $\angle X$ ?  
 a. 25                      b. 35                      c. 60                      d. 70
- d** 10. If  $m\widehat{BC} = 120$  and  $m\widehat{AD} = 50$ , what is the measure of  $\angle 1$ ?  
 a. 60                      b. 85                      c. 90                      d. 95
- a** 11. If  $AY = j$ ,  $YC = k$ , and  $YD = 7$ , what does  $BY$  equal?  
 a.  $\frac{jk}{7}$                       b.  $\frac{7j}{k}$                       c.  $\frac{7k}{j}$                       d.  $\frac{k}{7j}$

In Exercises 12–14,  $\overleftrightarrow{XA}$  is tangent to  $\odot O$  at  $X$ .

- d** 12. Which of these equals  $m\angle AXZ$ ?  
 a.  $m\widehat{XYZ}$                       b.  $m\angle OXM$                       c.  $\frac{1}{2}m\widehat{XY}$                       d.  $\frac{1}{2}m\widehat{XZ}$
- a** 13. If the radius of  $\odot O$  is 13 and  $XZ = 24$ , what is the distance from  $O$  to chord  $\overline{XZ}$ ?  
 a. 5                      b. 8                      c. 11                      d.  $\sqrt{407}$
- d** 14. If  $OM = 8$  and  $MY = 9$ , what does  $XZ$  equal?  
 a.  $6\sqrt{2}$                       b.  $2\sqrt{17}$                       c.  $\sqrt{145}$                       d. 30