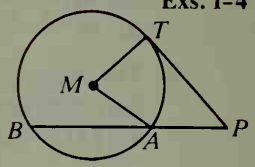
Chapter 9

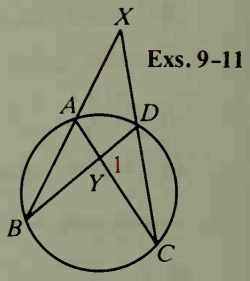
Indicate the best answer by writing the appropriate letter.

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



Exs. 1–4

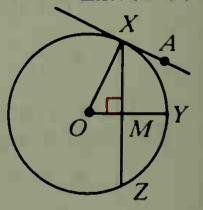
1. If $m\angle TMA = 80$, what is the measure of $\overset{\frown}{TBA}$?
   a. 100 **b.** 80 **c.** 280 **d.** 145
2. If $m\angle M = 80$, $m\angle P = 50$, what is the measure of $\angle MAP$?
   a. 140 **b.** 150 **c.** 160 **d.** 170
3. If $PA = 9$ and $AB = 16$, what does PT equal?
   a. 12 **b.** $\frac{25}{2}$ **c.** 15 **d.** 20
4. Suppose $\overline{PS}$ were drawn tangent to $\odot M$ at point S. If $m\angle SPT = 62$, find $m\overset{\frown}{ST}$.
   a. 62 **b.** 236 **c.** 118 **d.** 242
5. How many common tangents can be drawn to two circles that are externally tangent?
   a. one **b.** two **c.** three **d.** four
6. Points A, B, and C lie on a circle in the order named. $m\overset{\frown}{AB} = 110$ and $m\overset{\frown}{BC} = 120$. What is the measure of $\angle BAC$?
   a. 130 **b.** 65 **c.** 60 **d.** 55
7. Refer to Exercise 6. If point D lies on $\overset{\frown}{AC}$, what is the sum of the measures of $\angle ABC$ and $\angle ADC$?
   a. 180 **b.** 170 **c.** 160 **d.** 130
8. R and S are points on a circle. $\overline{RS}$ could be which of these?
   a. radius **b.** diameter **c.** secant **d.** tangent
9. If $m\overset{\frown}{BC} = 120$ and $m\overset{\frown}{AD} = 50$, what is the measure of $\angle X$?
   a. 25 **b.** 35 **c.** 60 **d.** 70
10. If $m\overset{\frown}{BC} = 120$ and $m\overset{\frown}{AD} = 50$, what is the measure of $\angle 1$?
    a. 60 **b.** 85 **c.** 90 **d.** 95
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.** $\frac{k}{7j}$



Exs. 9–11

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

12. Which of these equals $m\angle AXZ$?
    a. $m\overset{\frown}{XYZ}$ **b.** $m\angle OXM$ **c.** $\frac{1}{2}m\overset{\frown}{XY}$ **d.** $\frac{1}{2}m\overset{\frown}{XZ}$
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.** $\sqrt{407}$
14. If $OM = 8$ and $MY = 9$, what does XZ equal?
    a. $6\sqrt{2}$ **b.** $2\sqrt{17}$ **c.** $\sqrt{145}$ **d.** 30



Exs. 12–14