Questions 1 and 2 refer to the figure below. Use the given information about circle Q to answer questions 1 and 2.
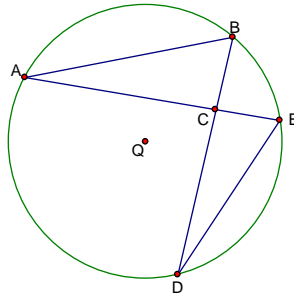
Given $m\overset{\frown}{AB} = 124$
$m\overset{\frown}{BE} = 46$
$m\overset{\frown}{ED} = 75$
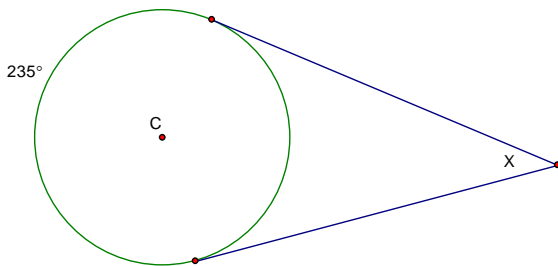
1. Find $m\angle ABD =$
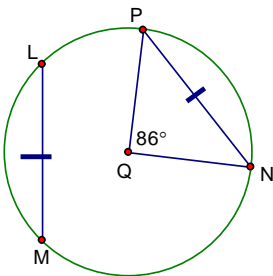
2. Find $m\angle BDE =$ **[G.C.2]**

3. Use the given information below to determine the value of x.   **[G.C.2]**

235°

4. Use the given information in the diagram below to find $m\overset{\frown}{LM}$ **[G.C.2]**
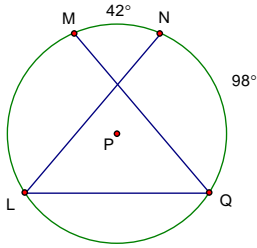
86°

5. What is the definition of a minor arc?   **[G.C.2]**
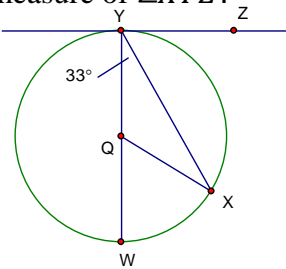
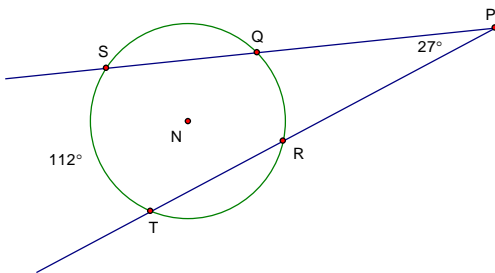6. In the circle below, P is the center. What is the measure of $\angle NLQ$? **[G.C.2]**

7. In the circle below, $\overline{YZ}$ is tangent to the circle at point Y, and $\overline{WY}$ is a diameter. What is the measure of $\angle XYZ$? **[G.C.2]**
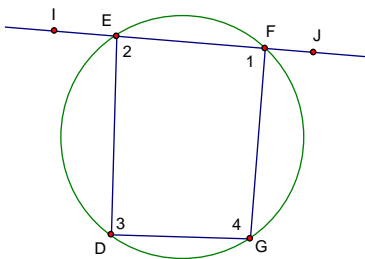

8. In the circle below, N is the center. The measure of $\angle P$ is $27°$ and the measure of

What is the measure of $\overset{\frown}{QR}$?
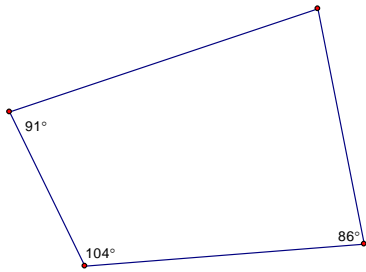

9. Given: $m\angle 2 = 35°$ and $m\angle 1 = 80°$, find the measure of each unknown angle. **[G.C.3]**
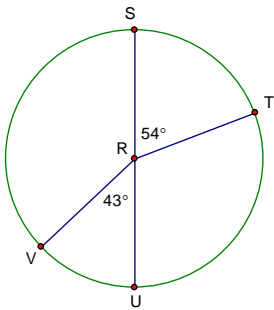

10. Are circles always similar? Explain your reasoning.

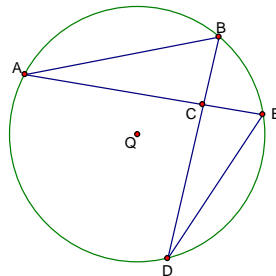11. Can this quadrilateral be inscribed in a circle?   **[G.C.3]**

91°

104°

86°

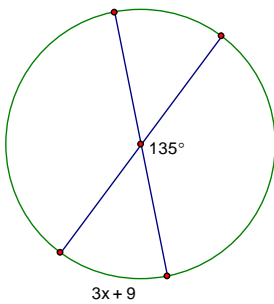12. In the figure, $\overline{US}$ is a diameter of circle R. What type of arc is $\overset{\frown}{STU}$?   **[G.C.2]**

S

T

R 54°

43°

V

U

13. Use the information below about circle Q to find $m\angle ACB$.

$m\overset{\frown}{AB} = 124$
$m\overset{\frown}{BE} = 46$
$m\overset{\frown}{ED} = 75$
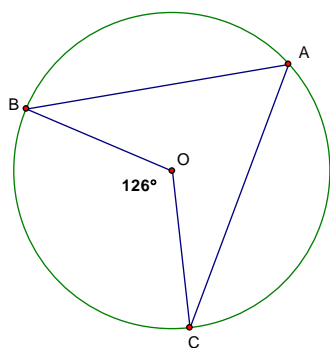
B

A

C

E

Q

D

14. Solve for x. The lines drawn are diameters to the circle.

135°

3x + 9

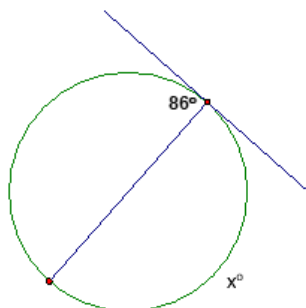15. Given diameter $\overline{AB}$, find x.

B

x

33°

A
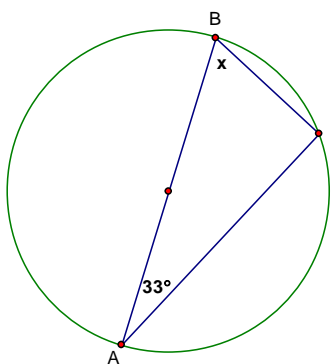
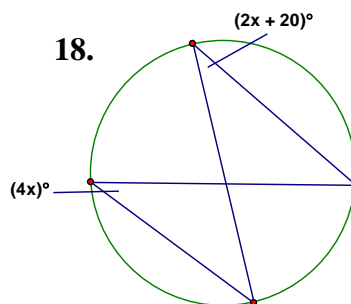16. Given circle O below, determine $m\angle BAC$.

A

B

O

126°

C

For questions 17 and 18 below, determine the value of x.

17.

86°
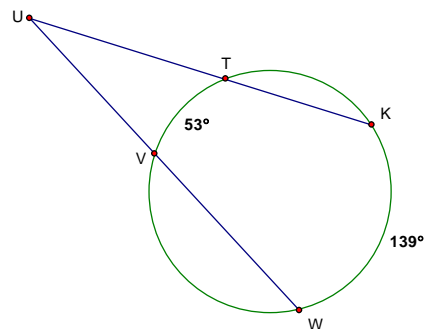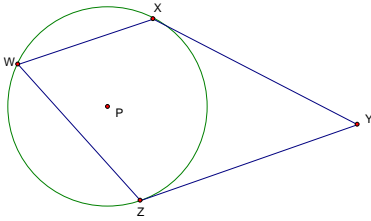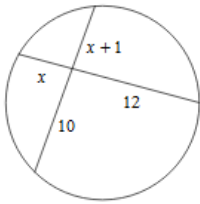
x°

18.

(2x + 20)°

(4x)°

19. Find the measure of $\angle WUK$.

U

T

K

53°

V

139°

W

20. Circle P has tangents $\overline{XY}$ and $\overline{ZY}$ and chords $\overline{WX}$ and $\overline{WZ}$, as shown in this figure. The measure of $\angle ZWX = 70°$. What is the measure, in degrees, of $\angle XYZ$?
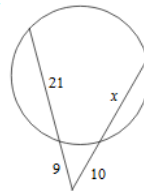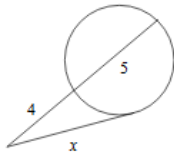

21. Solve for x.

22. **For a-c, fill in the word that best fits the given definition.**

a) A segment whose endpoints are on the circle is called a _____.

b) A segments that touches a circle at 2 points is called a _____.

c) A segment that touches a circle at one point is called a _____.

23. **For each of the following, solve for x.**

24. Two secants are drawn from the point P outside the circle. The external segment of the first secant segment (PB) is 6 inches and its internal segment (AB) is 5 inches. If the entire length of the second secant segment (EP) is 22 inches, what is the length of its external segment (PD)?