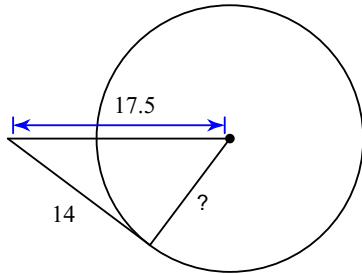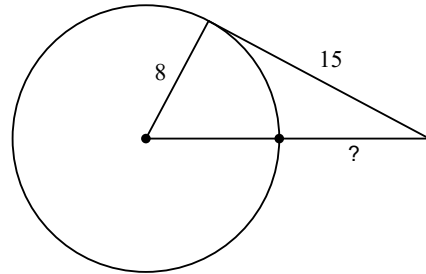Name_____

Lesson 11.3 ~ Extra Note Sheet

The Tangent to a Circle Theorem states: "A line drawn tangent to a circle is perpendicular to a radius of the circle drawn to the point of tangency."

Use the Tangent to a Circle Theorem and the Pythagorean Theorem to find the segment length indicated. Assume that lines which appear to be tangent are tangent.
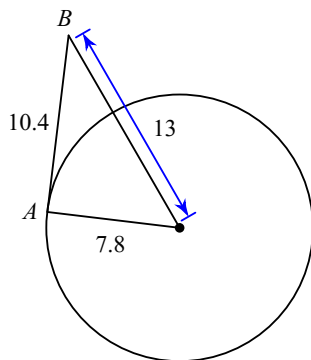
1)

17.5

14

?

2)

8

15

?

Use the Tangent to a Circle Theorem and the Pythagorean Theorem to determine if line AB is tangent to the circle.
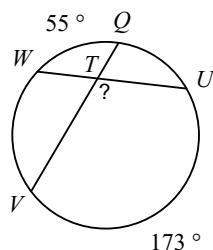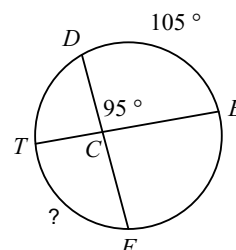
3)

B

10.4

13

A

7.8

The Interior Angles of a Circle Theorem states: "If an angle is formed by two intersecting chords or secants such that the vertex of the angle is in the interior of the circle, then the measure of the angle is half the sum of the measures of the arcs intercepted by the angle and its vertical angle."

Use the Interior Angles of a Circle Theorem to find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.
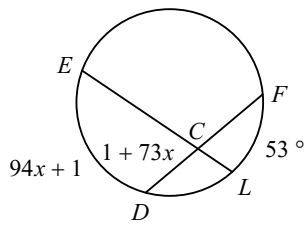
4)

55 ° Q

W

T

?

U

V

173 °

5)

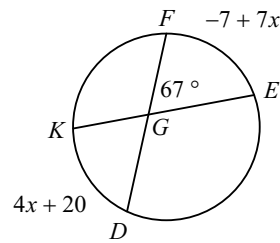105 °

D

95 °

E

T

C

?

F

Use the Interior Angles of a Circle Theorem to set up and solve an equation to find the value of *x*. Then find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.
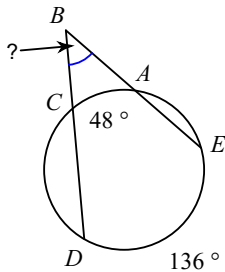
6) Find $m\angle DCE$

E
F
C
$1 + 73x$
$94x + 1$
L
$53°$
D

7) Find $m\overarc{FE}$

F $-7 + 7x$
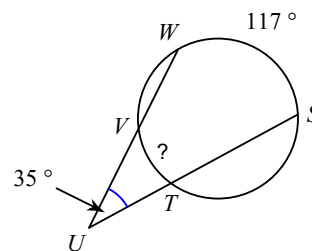$67°$
E
K
G
$4x + 20$
D

The Exterior Angles of a Circle Theorem states: "If an angle is formed by two intersecting secants, two intersecting tangents, or an intersecting tangent and secant such that the vertex of the angle is in the exterior of a circle, then the measure of the angle is half the difference of the measure of the arc(s) intercepted by the angle."

Use the Exterior Angles of a Circle Theorem to find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.
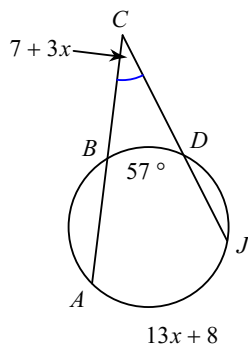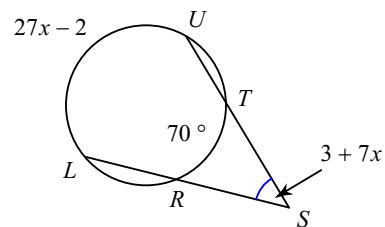
8)

B
$?$
A
C
$48°$
E
D
$136°$

9)

W $117°$
V
S
$?$
$35°$
T
U

Use the Exterior Angles of a Circle Theorem to set up and solve an equation to find the value of *x*. Then find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

10) Find $m\angle ACJ$

C
$7 + 3x$
B
D
$57°$
J
A
$13x + 8$

11) Find $m\overarc{LU}$

$27x - 2$
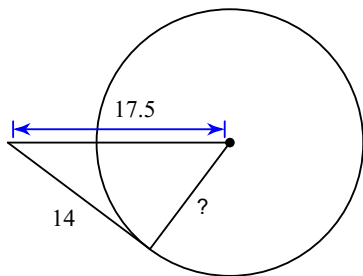U
T
$70°$
$3 + 7x$
L
R
S

Lesson 11.3 ~ Extra Note Sheet

The Tangent to a Circle Theorem states: "A line drawn tangent to a circle is perpendicular to a radius of the circle drawn to the point of tangency."
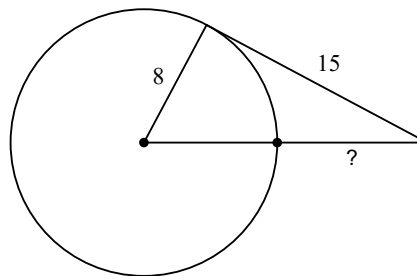
Use the Tangent to a Circle Theorem and the Pythagorean Theorem to find the segment length indicated. Assume that lines which appear to be tangent are tangent.
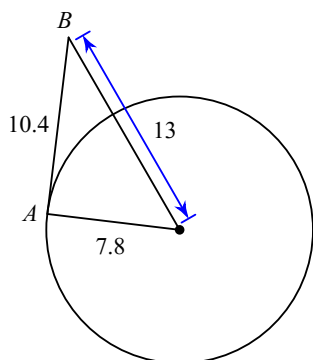
1)

17.5

14

?

10.5

2)

8

15

?

9

Use the Tangent to a Circle Theorem and the Pythagorean Theorem to determine if line AB is tangent to the circle.

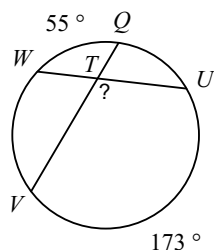3)   **Tangent**

B

10.4

13

A

7.8

The Interior Angles of a Circle Theorem states: "If an angle is formed by two intersecting chords or secants such that the vertex of the angle is in the interior of the circle, then the measure of the angle is half the sum of the measures of the arcs intercepted by the angle and its vertical angle."
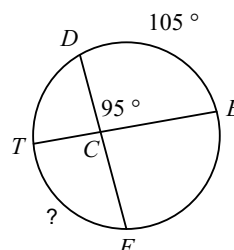
Use the Interior Angles of a Circle Theorem to find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.
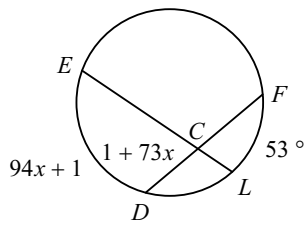
4)

55° Q

W

T

?

U

V

173°

114°

5)

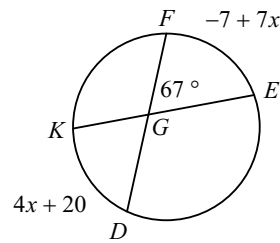
105°

D

95°

E

T

C

?

F

85°

Use the Interior Angles of a Circle Theorem to set up and solve an equation to find the value of *x*. Then find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

6) Find $m\angle DCE$

E
F
C
$1 + 73x$
$94x + 1$
$53°$
L
D

74°

7) Find $m\overarc{FE}$
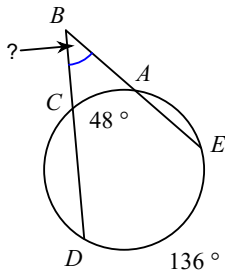
F $-7 + 7x$
$67°$
E
K
G
$4x + 20$
D

70°

The Exterior Angles of a Circle Theorem states: "If an angle is formed by two intersecting secants, two intersecting tangents, or an intersecting tangent and secant such that the vertex of the angle is in the exterior of a circle, then the measure of the angle is half the difference of the measure of the arc(s) intercepted by the angle."
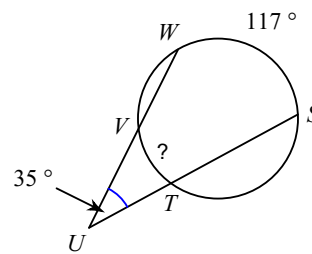
Use the Exterior Angles of a Circle Theorem to find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.
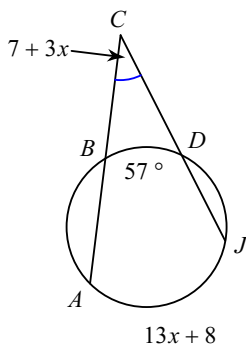
8)

B
$?\rightarrow$
A
C
$48°$
E
D $136°$

44°

9)

W $117°$
V S
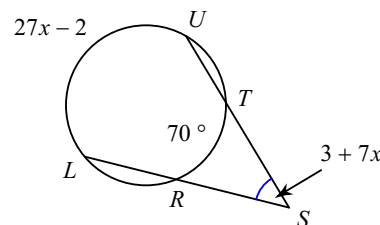$?$
$35°$
T
U

47°

Use the Exterior Angles of a Circle Theorem to set up and solve an equation to find the value of *x*. Then find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

10) Find $m\angle ACJ$

C
$7 + 3x\rightarrow$
B D
$57°$
J
A
$13x + 8$

34°

11) Find $m\overarc{LU}$

$27x - 2$ U
T
$70°$
L
R $3 + 7x$
S

160°