10-3 Arcs & Chords Practice

#1-6: Find the value of x in each circle.
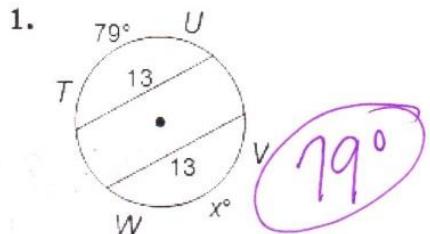
1.

79° U
T 13
13 V
W x°

79°

2.

(x + 17)° Q
P 14
14 S
R
(4x + 2)°

$x + 17 = 4x + 2$
$15 = 3x$
$5 = x$

3.

36
2x - 12

$2x - 12 = 36$
$2x = 48$
$x = 24$

4.

S
x°   x°
U 38° T
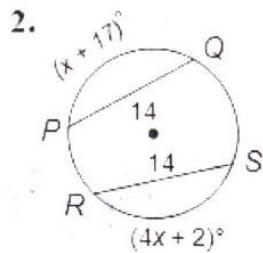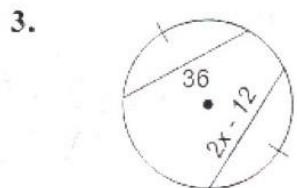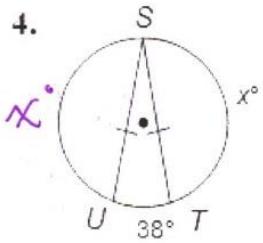
$2x + 38 = 360$
$2x = 322$
$x = 161$

5.

B
114°
x° 11
11 C
A   x
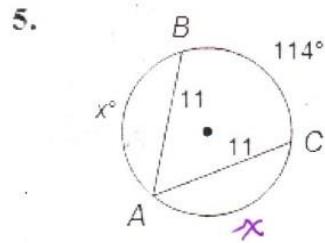
$2x + 114 = 360$
$2x = 246$
$x = 123$

6.

R 67 Q
x°
O
M 67° P
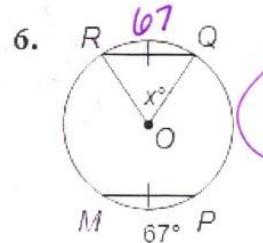
67°

#7-12: In ⊙Y, the radius is 34, AB= 60, and m$\overarc{AC}$ = 71. Find each measure.

7. m$\overarc{BC}$ **71°**

8. m$\overarc{AB}$ **142°**

Y 34
A 30 D 90° B
71° C 71°

9. AD **30**

10. BD **30**

11. YD x

34
30

$x^2 + 30^2 = 34^2$
$x^2 = 256$
$x = 16$

12. DC **18**
$34 - 16$

13. In ⊙U, VW = 20 and
YZ = 5x. What is x?

20
V 10 L 10 W
8 U Y
8 M
Z 5x
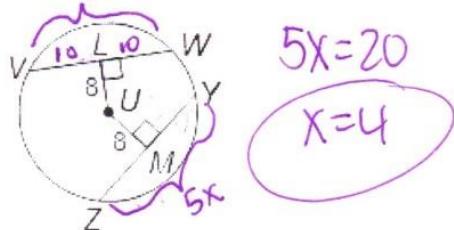
$5x = 20$
$x = 4$
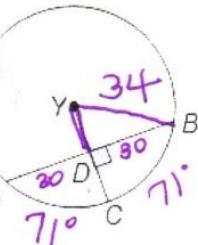
14. In ⊙Z, $\overarc{TR} \cong \overarc{TV}$, SZ = x + 4,
and UZ = 2x – 1. What is x?

T U
S 2x-1 V
x+4 Z
R
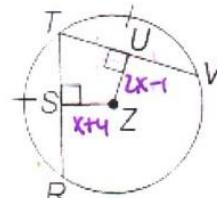
$x + 4 = 2x - 1$
$5 = x$

10-5 Tangents Practice

Determine whether each segment is tangent to the given circle.

1. $\overline{HI}$

H 40 I
9
41
G

$9^2 + 40^2 \overset{?}{=} 41^2$
$1681 = 1681$
Yes

2. $\overline{AB}$

A
4 12
C 13 B

$4^2 + 12^2 \neq 13^2$
$160 \neq 169$
No
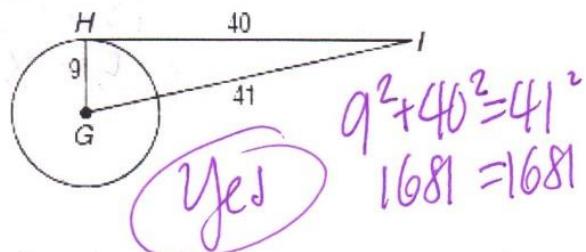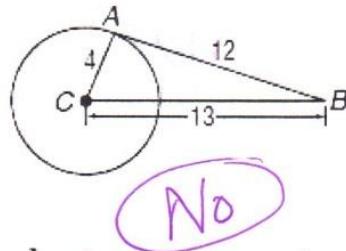
Find x. Assume that segments that appear to be tangent are tangent.

3.

P
$3x - 6$
R•
W
$x + 10$
Q

$3x - 6 = x + 10$
$2x = 16$
$x = 8$

4.

B
$4x + 2$
A •H
$2x + 8$
C

$4x + 2 = 2x + 8$
$2x = 6$
$x = 3$

5.

F
8 x
E 17 G
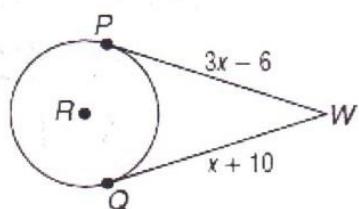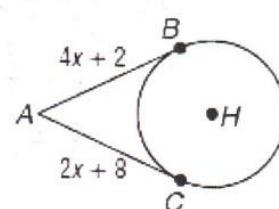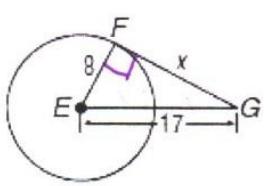
$8^2 + x^2 = 17^2$
$x^2 = 225$
$x = 15$

6.

W
x
Y
24 10
Z
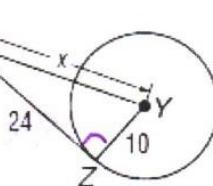
$x^2 = 24^2 + 10^2$
$x^2 =$
$x = 26$

Find the perimeter of each polygon for the given information. Assume that segments that appear to be tangent are tangent.

7. $QT = 4$, $PT = 9$, $SR = 13$

Q
4 4
T U
9
13
P 9 S 13 R

52

8. $HIJK$ is a rhombus, $SI = 5$, $HR = 13$

18
H 13 S 5 I
13 V
T
R•
K U J

$18 \cdot 4 \neq 72$
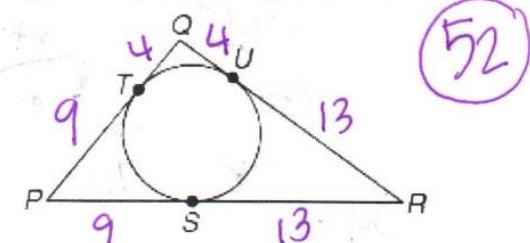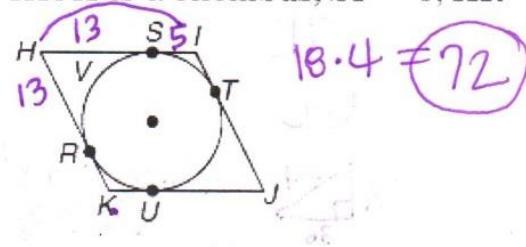
For #9 & 10, the design shown in the figure is that of a circular clock face inscribed in a triangular base. AF and FC are equal.

9. Find AB. **9.5**

10. Find the perimeter of the clock. **34**

B 2 in.
D E
7.5 7.5
A 7.5 F 7.5 in. C