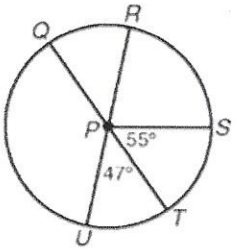
LESSON 15-1

Central Angles and Inscribed Angles

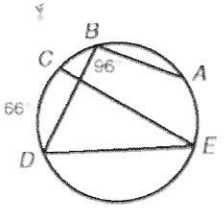
Practice and Problem Solving: A/B

For each figure, determine the indicated measures.

4. 

$m\overset{\frown}{QS} = \underline{180 - 55 = 125}$

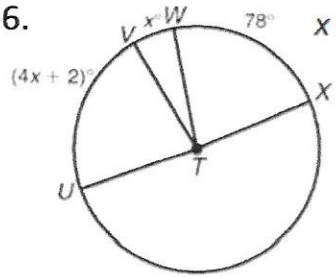
$m\overset{\frown}{RQT} = \underline{180 + 47 = 227}$

5. 

$m\angle CED = \underline{\frac{1}{2}(66) = 33}$

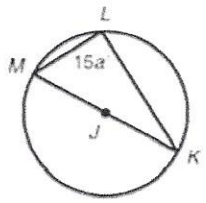
$m\overset{\frown}{DEA} = \underline{2(96) = 192}$

Find the unknown value.

6. 

$x = \underline{20}$

$4x + 2 + x + 78 = 180$
$5x + 80 = 180$
$5x = 100$
$x = 20$

7. 

$a = \underline{6}$

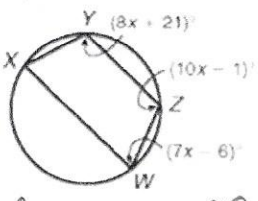
$15a = 90$
$a = 6$

LESSON 15-2

Angles in Inscribed Quadrilaterals

Practice and Problem Solving: A/B

For each inscribed quadrilateral, determine the angle measures.

2. 

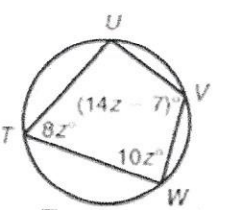
$7x - 6 + 8x + 21 = 180$
$15x + 15 = 180$
$15x = 165$
$x = 11$

$m\angle X = \underline{180 - 109 = 71}$

$m\angle Y = \underline{8(11) + 21 = 109}$

$m\angle Z = \underline{10(11) - 1 = 109}$

$m\angle W = \underline{7(11) - 6 = 71}$

3. 

$14z - 7 + 8z = 180$
$22z - 7 = 180$
$22z = 187$
$z = 8.5$

$m\angle T = \underline{8(8.5) = 68}$

$m\angle U = \underline{180 - 85 = 95}$

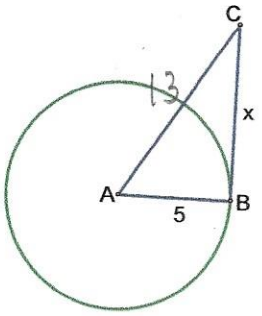
$m\angle V = \underline{14(8.5) - 7 = 112}$

$m\angle W = \underline{10(8.5) = 85}$

LESSON 15-3

Tangents and Circumscribed Angles

Practice and Problem Solving: A/B



In $\odot A$, $AC = 13$.

1) Find $m\angle B$. $= 90$

2) Find x.

$5^2 + x^2 = 13^2$
$25 + x^2 = 169$
$x^2 = 144$
$x = 12$

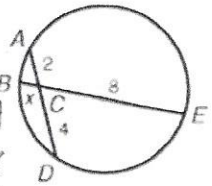
LESSON 15-4

Segment Relationships in Circles

Practice and Problem Solving: A/B

For each figure, determine the value of the variable and the indicated lengths by applying the Chord-Chord Product Theorem.

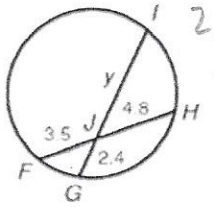
1.



$8x = 2.4$
$8x = 8$
$x = 1$

$x =$ 1
$AD =$ 6
$BE =$ 9

2.

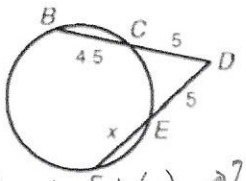


$2.4y = (3.5)(4.8)$
$2.4y = 16.8$
$y = 7$

$y =$ 7
$FH =$ 8.3
$GI =$ 9.4

For each figure, determine the value of the variable and the indicated lengths by applying the Secant-Secant Product Theorem.

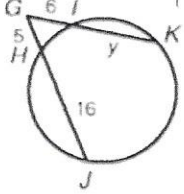
3.



$(9.5)(5) = (x+5)(5)$
$47.5 = 5x + 25$
$22.5 = 5x$
$x = 4.5$

$x =$ 4.5
$BD =$ 9.5
$FD =$ 9.5

4.



$21(5) = (6+y)(6)$
$105 = 36 + 6y$
$69 = 6y$
$y = 11.5$

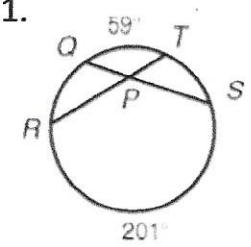
$y =$ 11.5
$GJ =$ 21
$GK =$ 17.5

LESSON 15-5

Angle Relationships in Circles

Practice and Problem Solving: A/B

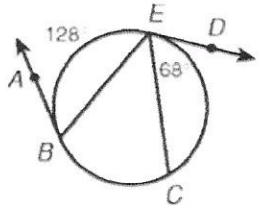
1.



$x = \frac{1}{2}(59 + 201)$
$= 130$

$m\angle RPS =$ 130

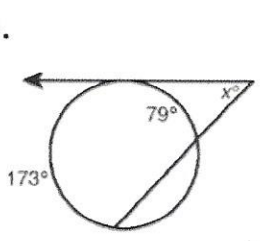
2.



$m\angle ABE = \frac{1}{2}(128) = 64$

$m\widehat{CE} = 2(68) = 136$

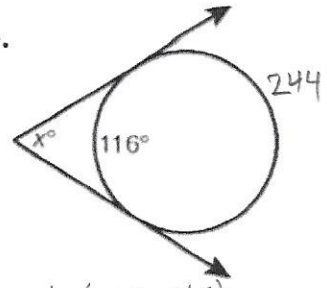
3.



$x = \frac{1}{2}(173 - 79)$
$= \frac{1}{2}(94) = 47$

$x =$ 47

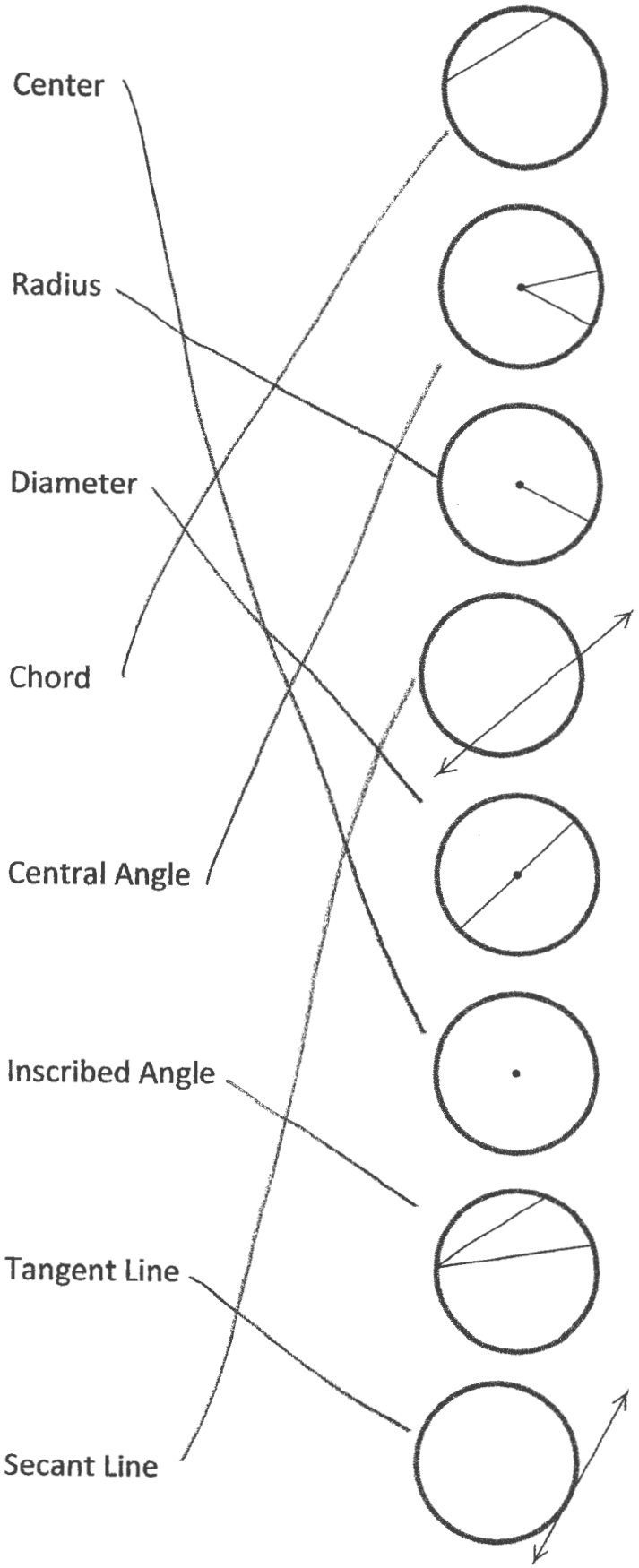
4.



$x = \frac{1}{2}(244 - 116)$
$= \frac{1}{2}(128) = 64$

$x =$ 64

Match each term with the appropriate picture.



Factor:

1. $x^2 + x - 90$
   $(x+10)(x-9)$
2. $x^2 + 8x + 7$
   $(x+1)(x+7)$
3. $x^2 - 10x + 9$
   $(x-1)(x-9)$
4. $x^2 + 2x - 24$
   $(x+6)(x-4)$
5. $x^2 - 13x + 40$
   $(x-5)(x-8)$
6. $x^2 - x - 56$
   $(x-8)(x+7)$

Solve for x. Hint: Factor first!

1. $x^2 - 3x - 70 = 0$
   $(x-10)(x+7) = 0$
   $x-10=0 \quad x+7=0$
   $x=10 \quad x=-7$
2. $x^2 + 8x + 15 = 0$
   $(x+3)(x+5) = 0$
   $x+3=0 \quad x+5=0$
   $x=-3 \quad x=-5$
3. $x^2 - 9x + 8 = 0$
   $(x-8)(x-1) = 0$
   $x-8=0 \quad x-1=0$
   $x=8 \quad x=1$
4. $x^2 + 2x - 48 = 0$
   $(x+8)(x-6) = 0$
   $x+8=0 \quad x-6=0$
   $x=-8 \quad x=6$
5. $x^2 - 9x + 18 = 0$
   $(x-3)(x-6) = 0$
   $x-3=0 \quad x-6=0$
   $x=3 \quad x=6$
6. $x^2 - 12x = -35$
   $x^2 - 12x + 35 = 0$
   $(x-5)(x-7) = 0$
   $x-5=0 \quad x-7=0$
   $x=5 \quad x=7$