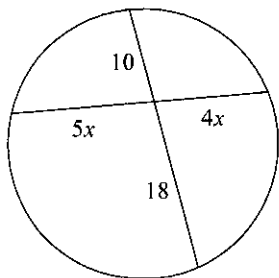


Unit 9b Quiz Review

Solve for x. Assume that lines which appear tangent are tangent.

1)



part · part = part · part

$$5x \cdot 4x = 10 \cdot 18$$

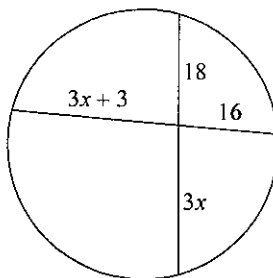
$$\frac{20x^2}{20} = \frac{180}{20}$$

$$\sqrt{x^2} = \sqrt{9}$$

$$x = 3$$

positive option only

2)



part · part = part · part

$$(3x+3)(16) = 18 \cdot 3x$$

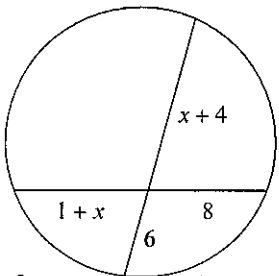
$$48x + 48 = 54x$$

$$-48x \quad -48x$$

$$\frac{48}{6} = \frac{6x}{6}$$

$$8 = x$$

3)



part · part = part · part

$$(1+x)(8) = (x+4)(6)$$

$$8 + 8x = 6x + 24$$

$$-6x \quad -6x$$

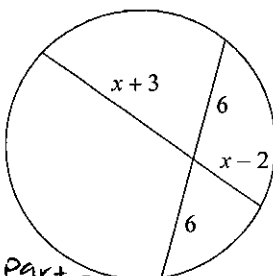
$$8 + 2x = 24$$

$$-8 \quad -8$$

$$\frac{2x}{2} = \frac{16}{2}$$

$$x = 8$$

4)



part · part = part · part

$$(x+3)(x-2) = (6)(6)$$

$$x^2 + x - 6 = 36$$

$$-36 \quad -36$$

$$x^2 + x - 42 = 0$$

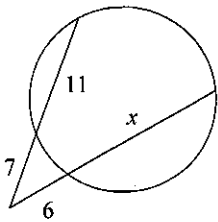
$$(x+7)(x-6) = 0$$

$$7 \quad -6$$

~~$$x = 7$$~~

$$x = 6$$

5)



Outside · whole = outside · whole

$$7(18) = 6(6+x)$$

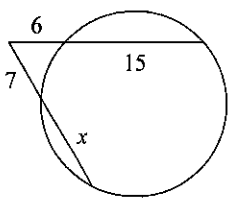
$$126 = 36 + 6x$$

$$-36 \quad -36$$

$$\frac{90}{6} = \frac{6x}{6}$$

$$x = 15$$

6)



O · w = O · w

$$7(7+x) = 6(21)$$

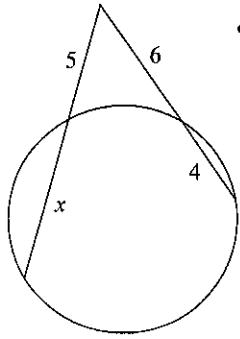
$$49 + 7x = 126$$

$$-49 \quad -49$$

$$\frac{7x}{7} = \frac{77}{7}$$

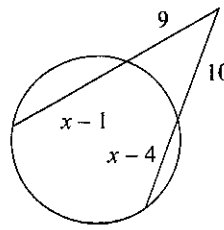
$$x = 11$$

7)



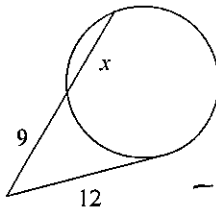
$$\begin{aligned}
 o \cdot w &= o \cdot w \\
 5(5+x) &= 6(10) \\
 25 + 5x &= 60 \\
 -25 & \quad -25 \\
 \hline
 5x &= 35 \\
 \frac{5x}{5} &= \frac{35}{5} \\
 x &= 7
 \end{aligned}$$

8)



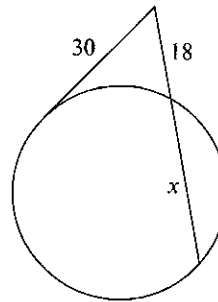
$$\begin{aligned}
 o \cdot w &= o \cdot w \\
 9(x+4) &= 10(10+x-4) \\
 9(8+x) &= 10(6+x) \\
 72 + 9x &= 60 + 10x \\
 -9x & \quad -9x \\
 \hline
 72 &= 60 + x \\
 -60 & \quad -60 \\
 \hline
 12 &= x
 \end{aligned}$$

9)



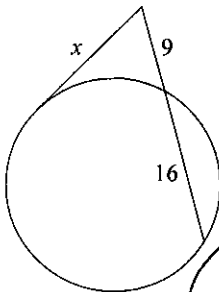
$$\begin{aligned}
 \tan^2 &= \text{outside} \cdot \text{whole} \\
 12^2 &= 9(9+x) \\
 144 &= 81 + 9x \\
 -81 & \quad -81 \\
 \hline
 63 &= 9x \\
 \frac{63}{9} &= \frac{9x}{9} \\
 x &= 7
 \end{aligned}$$

10)



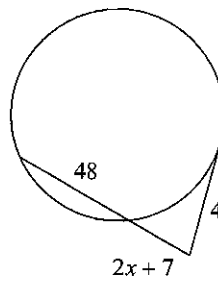
$$\begin{aligned}
 \tan^2 &= o \cdot w \\
 30^2 &= 18(18+x) \\
 900 &= 324 + 18x \\
 -324 & \quad -324 \\
 \hline
 576 &= 18x \\
 \frac{576}{18} &= \frac{18x}{18} \\
 32 &= x
 \end{aligned}$$

11)



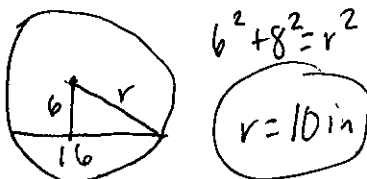
$$\begin{aligned}
 \tan^2 &= o \cdot w \\
 x^2 &= 9(25) \\
 \sqrt{x^2} &= \sqrt{225} \\
 x &= 15
 \end{aligned}$$

12)



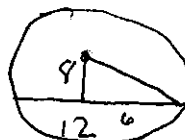
$$\begin{aligned}
 \tan^2 &= o \cdot w \\
 (4x+5)^2 &= (2x+7)(2x+7+48) \\
 (4x+5)(4x+5) &= (2x+7)(2x+55) \\
 16x^2 + 40x + 25 &= 4x^2 + 124x + 385 \\
 -4x^2 - 124x - 385 & \quad -4x^2 - 124x - 385 \\
 \hline
 12x^2 - 84x - 360 &= 0 \\
 \text{GCF: } 12(x^2 - 7x - 30) &= 0 \quad \begin{matrix} -10 & -30 \\ -7 & 3 \end{matrix} \\
 & \quad \quad \quad (x-10)(x+3)
 \end{aligned}$$

13) A chord is 16 in. long and is 6 in. from the center. Find the length of the radius.



$$\begin{aligned}
 6^2 + 8^2 &= r^2 \\
 r &= 10 \text{ in}
 \end{aligned}$$

14) A 12 cm chord is 8 cm from the center. Find the length of the radius of the circle.



$$\begin{aligned}
 r &= 10 \text{ cm} \\
 x &= 3
 \end{aligned}$$