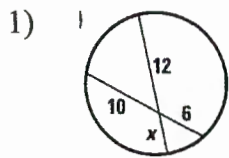


12.6 - Segments of Chords, Secants, and Tangents

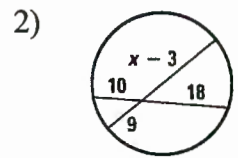
Find the missing length value.



$$12x = 6(10)$$

$$12x = 60$$

$$\boxed{x = 5}$$

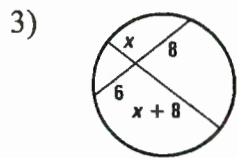


$$9(x-3) = 10(18)$$

$$9x - 27 = 180$$

$$9x = 207$$

$$\boxed{x = 23}$$



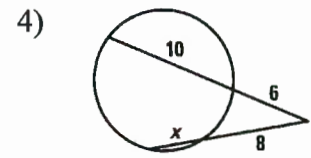
$$x(x+8) = 6(8)$$

$$x^2 + 8x = 48$$

$$x^2 + 8x - 48 = 0$$

$$(x+12)(x-4) = 0$$

$$\boxed{x = 4}$$

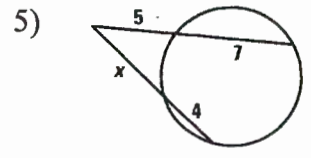


$$6(16) = 8(x+8)$$

$$96 = 8x + 64$$

$$32 = 8x$$

$$\boxed{x = 4}$$



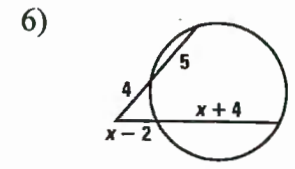
$$5(12) = x(x+4)$$

$$60 = x^2 + 4x$$

$$0 = x^2 + 4x - 60$$

$$0 = (x+10)(x-6)$$

$$\boxed{x = 6}$$



$$4(9) = (x-2)(2x+2)$$

$$36 = (x-2)(x+1)2$$

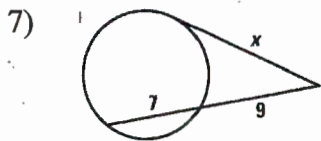
$$18 = (x-2)(x+1)$$

$$18 = x^2 - x - 2$$

$$0 = x^2 - x - 20$$

$$0 = (x-5)(x+4)$$

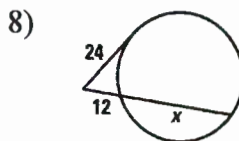
$$\boxed{x = 5}$$



$$x^2 = 9(14)$$

$$x^2 = 126$$

$$\boxed{x = 12}$$

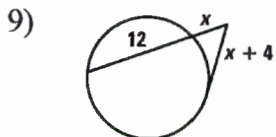


$$24^2 = 12(x+12)$$

$$576 = 12(x+12)$$

$$48 = x+12$$

$$\boxed{x = 36}$$



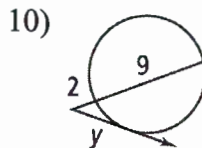
$$x(x+12) = (x+4)^2$$

$$x^2 + 12x = x^2 + 8x + 16$$

$$12x = 8x + 16$$

$$4x = 16$$

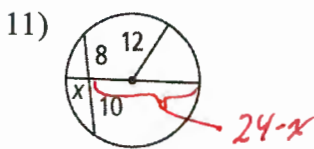
$$\boxed{x = 4}$$



$$2(11) = y^2$$

$$22 = y^2$$

$$\boxed{\sqrt{22} = y}$$



$$8(10) = x(24-x)$$

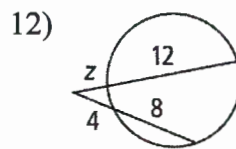
$$80 = 24x - x^2$$

$$x^2 - 24x + 80 = 0$$

$$(x-20)(x-4) = 0$$

$$x = 4 \text{ or } 20$$

$$x = 4$$



$$z(z+12) = 4(12)$$

$$z^2 + 12z = 48$$

$$z^2 + 12z - 48 = 0$$

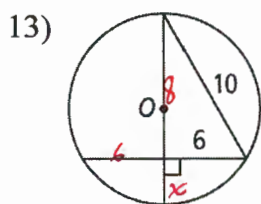
$$z^2 + 12z + 36 = 48 + 36$$

$$(z+6)^2 = 84$$

$$z+6 = z \pm \sqrt{84}$$

$$z = -6 \pm 2\sqrt{21}$$

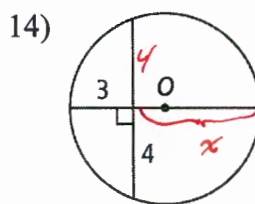
Find the diameter of $\odot O$. A line that appears to be tangent is tangent. If your answer is not a whole number, round to the nearest tenth.



$$8x = 36$$

$$x = 4.5$$

$$8 + 4.5 = \boxed{12.5}$$



$$3x = 4(4)$$

$$3x = 16$$

$$x = 5.\bar{3}$$

$$3 + 5.\bar{3} = \boxed{8.\bar{3}}$$