10-7 Practice
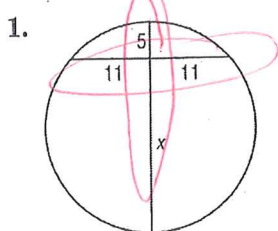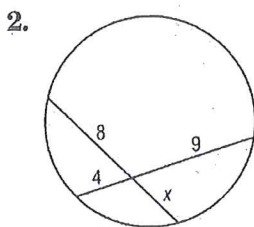
Special Segments in a Circle

Find x to the nearest tenth. Assume that segments that appear to be tangent are tangent.
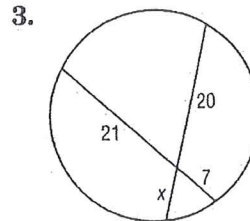
1.
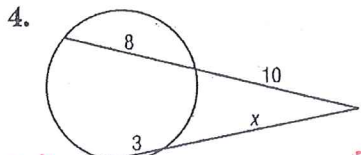

$\dfrac{5x}{5} = \dfrac{121}{5}$

$x = 24.2$

2.

$8x = 36$

$x = 4.5$

3.

$20x = 147$

$x = 7.4$

4.

$x(x+3) = 10 \cdot 18$

$x^2 + 3x - 180 = 0$

$(x+15)(x-12)$ $\boxed{x = 12}$
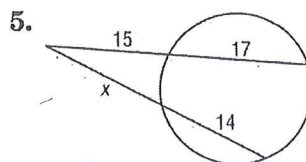
5.

$x(x+14) =$

$\boxed{16}$

$x + x - 3$

$x(2x-3)$ $2x^2 - 3x$

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

$2x^2 - 3x = 36$
$\qquad -36 \quad -36$

$2x^2 - 3x - 36 = 0$

$a = 2 \qquad \dfrac{-b \pm \sqrt{b^2-4ac}}{2a}$
$b = -3$
$c = -36$

$\dfrac{3 \pm \sqrt{9 - 4(2)(-36)}}{2(2)}$

$\dfrac{3 \pm \sqrt{9 + 288}}{4}$

$\dfrac{3 \pm \sqrt{297}}{4}$

$\dfrac{3 + 17.2}{4}$

$\dfrac{20.2}{4}$

5.1

6.

$\boxed{9}$

7.

$\boxed{5.1}$

8.
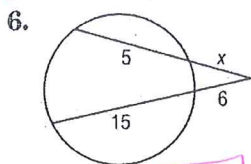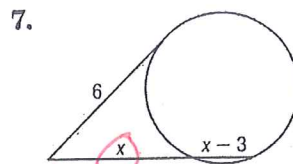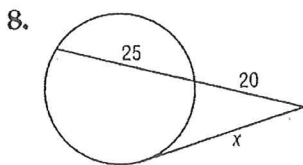
$x(x+x-6) = 20^2$

$x(2x-6) = 400$

$2x^2 - 6x - 400 = 0$

$x^2 - 3x - 200$

$\boxed{30}$

9.

$\boxed{15.7}$
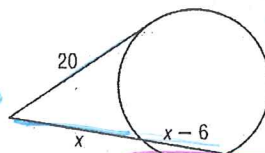
10. CONSTRUCTION An arch over an apartment entrance is 3 feet high and 9 feet wide. Find the radius of the circle containing the arc of the arch.
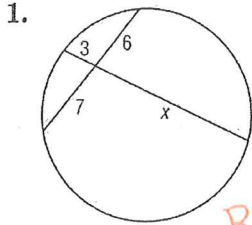

4.875 ft

Glencoe Geometry
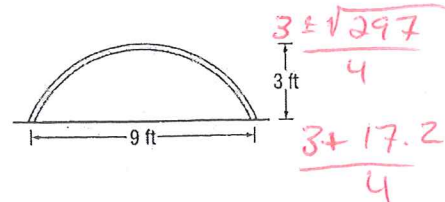
15.7
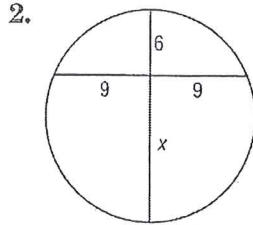
10-7 Skills Practice

Special Segments in a Circle

Find x to the nearest tenth. Assume that segments that appear to be tangent are tangent.
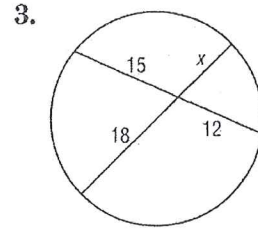
1.

$\dfrac{3x}{3} = \dfrac{42}{3}$

$x = 14$
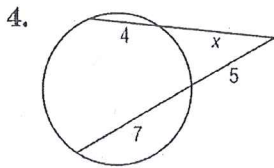
$\boxed{14}$

2.

$\dfrac{6x}{6} = \dfrac{81}{6}$

$\boxed{x = 13.5}$

3.

$\dfrac{18x}{18} = \dfrac{180}{18}$

$\boxed{x = 10}$

4.

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

$x^2 + 4x = 60$

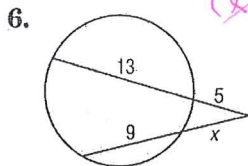$x^2 + 4x - 60 = 0$

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

$\boxed{x = 6}$

5.
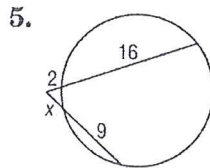
$x(x+9) = 2 \cdot 18$

$x^2 + 9x = 36$

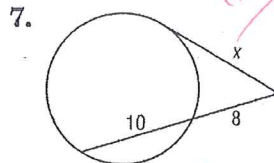$x^2 + 9x - 36 = 0$

$(x+12)(x-3)$

$x = 3$

6.

$x(x+9) = 5 \cdot (18)$

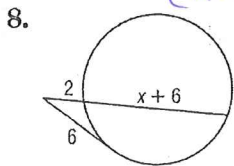$x^2 + 9x = 90$

$x^2 + 9x - 90 = 0$

$(x-6)(x+15)$

$x = 6$

7.

$x^2 = 8 \cdot 18$

$\sqrt{x^2} = \sqrt{144}$

$x = \pm 12$

$\boxed{x = 12}$

8.

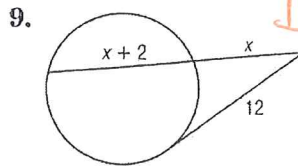$2(x+8) = 6^2$

$2x + 16 = 36$

$2x = 20$

$x = 10$

9.

$x(2x+2) = 144$

$2x^2 + 2x = 144$

$2x^2 + 2x - 144 = 0$

$x^2 + x - 72$

$(x-8)(x+9)$

$\boxed{x = 8}$