11.4 Practice Solutions

Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

1) \( 117 = \frac{1}{2} (109 + x) \)
   \( 117 = 54.5 + \frac{1}{2} x \)
   \( 62.5 = \frac{1}{2} x \)
   \( 125 = x \)

2) \( x = \frac{1}{2} (132 - 62) \)
   \( x = \frac{1}{2} (70) \)
   \( x = 35^\circ \)

3) \( x = \frac{1}{2} (65 + 103) \)
   \( x = \frac{1}{2} (168) \)
   \( x = 84^\circ \)

4) \( x = \frac{1}{2} (135 - x) \)
   \( 78 = 135 - x \)
   \( x = 57^\circ \)

5) \( x = \frac{1}{2} (x - 63) \)
   \( 33 = \frac{1}{2} x - 1 \)
   \( x = 129 \)
   \( x = \frac{1}{2} (200 - 7) \)
   \( x = \frac{1}{2} (122) \)
   \( x = 61^\circ \)

6) \( x = \frac{1}{2} (x - 81) \)
   \( 40 = 105 - x \)
   \( x = 65 \)

Solve for \( x \). Assume that lines which appear tangent are tangent.

7) \( 39 = \frac{1}{2} (x - 64) \)
   \( 139 = \frac{1}{2} x - 32 \)
   \( x = 142 \)

8) \( 34x + 1 = \frac{1}{2} (126 - 56) \)
   \( 34x + 1 = \frac{1}{2} (70) \)
   \( 34x + 1 = 35 \)
   \( x = 1 \)

9) \( 34x + 1 = \frac{1}{2} (155 + 75) \)
   \( 9x - 5 = \frac{1}{2} (155 + 75) \)
   \( 9x - 5 = \frac{1}{2} (230) \)
   \( 9x - 5 = 115 \)
   \( 9x = 120 \)
   \( x = 10 \)

10) \( M = 155^\circ \)
    \( 5x + 10 = 155 \)
    \( 5x = 145 \)
    \( x = 29 \)

Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

11) \( U = 51^\circ \)
    \( T = 133^\circ \)
12) \( X = \frac{1}{2} (x + 5) \)
    \( X = 5 \)

13) \( 18x = 16 \)
    \( X = 24 \)

14) \( 18x = 43.2 \)
    \( X = 24 \)

15) \( 9x \cdot 9 = 180 \)
    \( x = 17 \)

16) \( 10x + 10 = 270 \)
    \( x = 17 \)

17) \( 5x + 25 = 60 \)
    \( 5x = 35 \)
    \( x = 7 \)

18) \( 85 = \frac{1}{2} (6x + 12 + 10 + 8x) \)
    \( 85 = \frac{1}{2} (16x + 26) \)
    \( x = 7 \)

19) \( m \angle LMN = 6(x + 9) \)
    \( m \angle LMN = 70^\circ \)
    \( 6x + 54 = 70 \)
    \( 6x = 16 \)
    \( x = 2.67 \)

Find measure of \( \angle LMN \).

Parentheses first:

\( 6x + 6 = 16 \)
\( 6x = 10 \)
\( x = 1.67 \)