

3.2 Practice Solutions

Directions: Identify all the numbered angles that are congruent to the given angle. JUSTIFY your answer.

1)

$\angle 4 \rightarrow$ CORR. L'S
 $\angle 1 \rightarrow$ VERTICAL L'S
 $\angle 7 \rightarrow$ ALT. INT. L'S

2)

$\angle 3 \rightarrow$ ALT. INT. L'S
 $\angle 1 \rightarrow$ CORR. L'S

Directions: Solve for x.

3)

$$15x + 8 = 128$$

$$\begin{array}{r} 15x + 8 = 128 \\ -8 \quad -8 \\ \hline 15x = 120 \\ \frac{15x}{15} = \frac{120}{15} \\ x = 8 \end{array}$$

4)

$$-1 + 11x + 115 = 180$$

$$11x + 114 = 180$$

$$\begin{array}{r} 11x + 114 = 180 \\ -114 \quad -114 \\ \hline 11x = 66 \\ \frac{11x}{11} = \frac{66}{11} \\ x = 6 \end{array}$$

5)

$$20x - 6 = 114$$

$$\begin{array}{r} 20x - 6 = 114 \\ +6 \quad +6 \\ \hline 20x = 120 \\ \frac{20x}{20} = \frac{120}{20} \\ x = 6 \end{array}$$

6)

$$\frac{120}{15} = \frac{15x}{15}$$

$$x = 8$$

Directions: Find the measure of the angle indicated in bold.

7)

$$10x - 10 = 8x + 10$$

$$\begin{array}{r} 10x - 10 = 8x + 10 \\ -8x \quad -8x \\ \hline 2x - 10 = 10 \\ +10 \quad +10 \\ \hline 2x = 20 \\ \frac{2x}{2} = \frac{20}{2} \\ x = 10 \end{array}$$

$8(10) + 10 = 90$
 $80 + 10 = 90$

8)

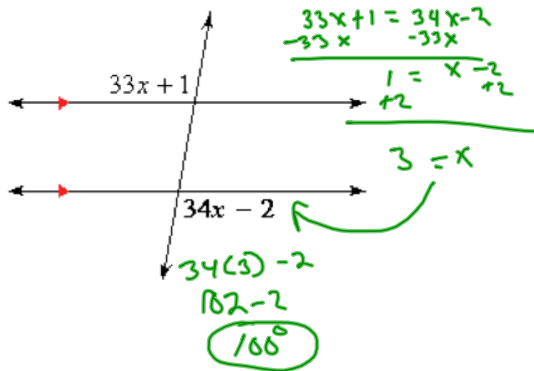
$$(x + 121) + (x + 81) = 180$$

$$2x + 202 = 180$$

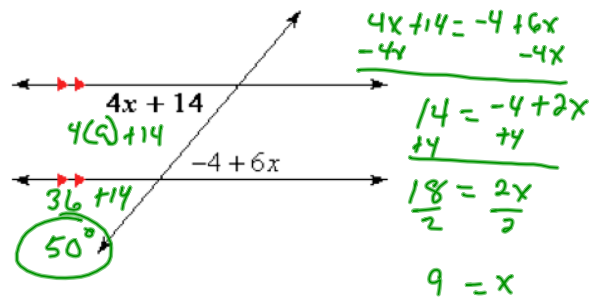
$$\begin{array}{r} 2x + 202 = 180 \\ -202 \quad -202 \\ \hline 2x = -22 \\ \frac{2x}{2} = \frac{-22}{2} \\ x = -11 \end{array}$$

$-11 + 121 = 110$
 116

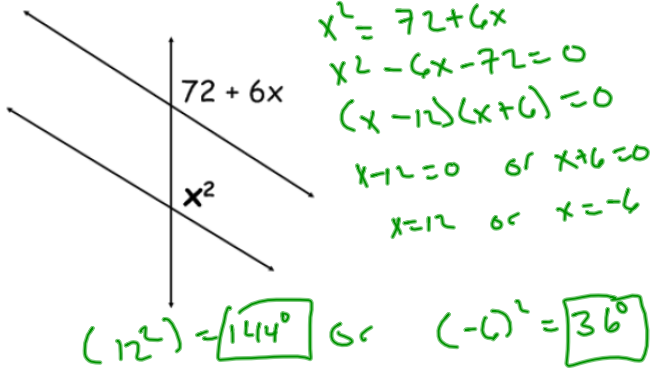
9)



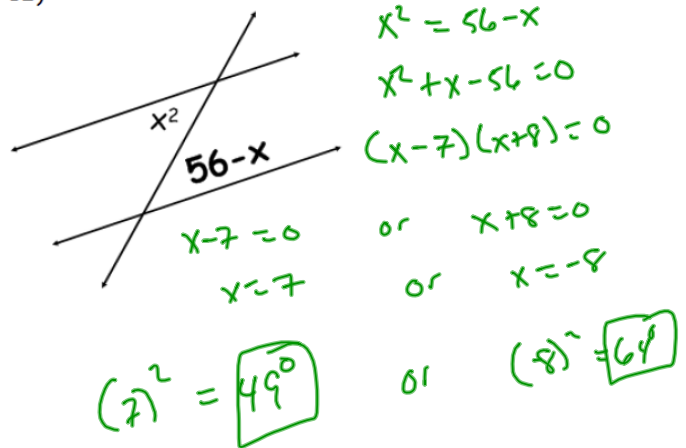
10)



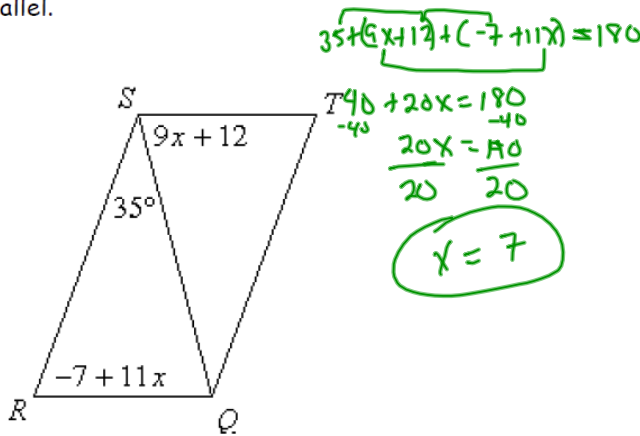
11)



12)



3) Solve for x. Opposite sides of the figure are parallel.



14) Solve for x. The top and bottom sides are parallel.

