

# Objective:

Recognize the conditions that ensure a quadrilateral is a parallelogram.

# Lesson 6-3 Study Guide

$$\begin{array}{r} 2x - 2 = 12 \\ + 2 \quad + 2 \\ \hline 2x = 14 \\ \hline x = 7 \end{array}$$

$$x = 7$$

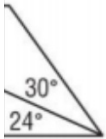
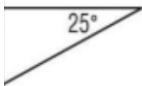
$$\frac{2y}{2} = \frac{8}{2} \quad y = 4$$

$$\begin{array}{r} 5y = 25 \\ \hline y = 5 \end{array}$$

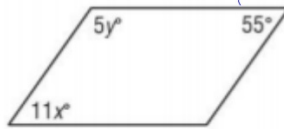
$$y = 5$$

$$\begin{array}{r} 5x + 25 = 180 \\ - 25 \quad - 25 \\ \hline 5x = 155 \\ \hline x = 31 \end{array}$$

$$x = 31$$



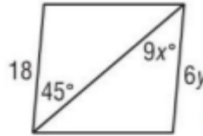
2.



$$\begin{array}{r} 11x = 55 \\ \hline 11x = 11 \end{array}$$

$$x = 5$$

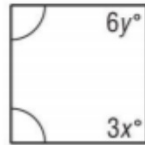
4.



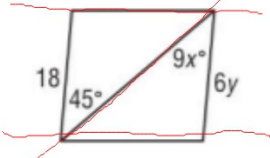
$$\begin{array}{r} 5y + 55 = 180 \\ - 55 \quad - 55 \\ \hline 5y = 125 \end{array}$$

$$\begin{array}{r} 5y = 125 \\ \hline y = 25 \end{array}$$

6.

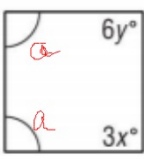


$$y = 25$$

4. 

$$\frac{6y=18}{6 \quad 6} \quad \frac{9x=45}{9 \quad 9} \quad \textcircled{x=5}$$

$$\textcircled{y=3}$$

6. 

$$3x = a$$

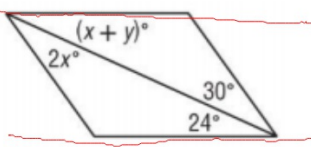
$$6y = a$$

$$a + a = 180$$

$$\frac{2a = 180}{2 \quad 2}$$

$$\frac{3x = 90}{3 \quad 3} \quad \textcircled{x=30}$$

$$\frac{6y = 90}{6 \quad 6} \quad \textcircled{y=15}$$

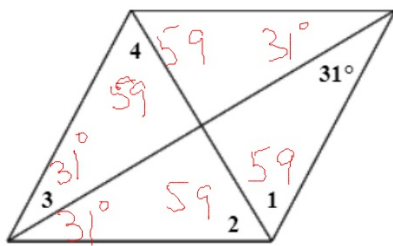
5. 

$$\frac{2x = 30}{2 \quad 2} \quad \frac{x+y = 24}{15 \quad 15}$$

$$\textcircled{x=15} \quad \begin{array}{r} -15 \\ -15 \end{array}$$

$$\textcircled{y=9}$$

For the rhombus below, find the measures of  $\angle 1$ ,  $\angle 2$ ,  $\angle 3$ , and  $\angle 4$ .



$$\begin{aligned} m\angle 1 &= \boxed{59}^\circ \\ m\angle 2 &= \boxed{59}^\circ \\ m\angle 3 &= \boxed{31}^\circ \\ m\angle 4 &= \boxed{59}^\circ \end{aligned}$$

$$180 - 62 = 118$$

$$m\angle 1 = \frac{118}{2} = 59$$