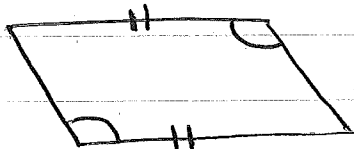
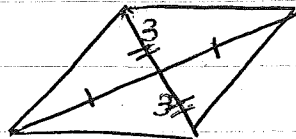


## 6-3 Tests for Parallelograms

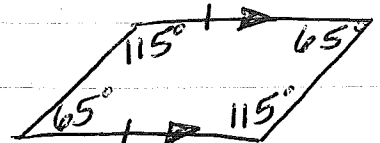
Determine whether the quad. is a .




No

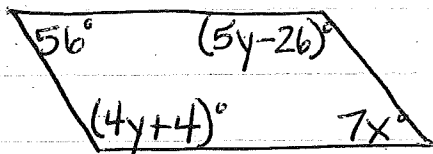


Yes, diagonals bisect each other.



Yes, opp.  $\angle$ s are  $\cong$  and opp. sides are  $\parallel$  and  $\cong$ .

ex: Find  $x$  and  $y$  so that this quad. is a .

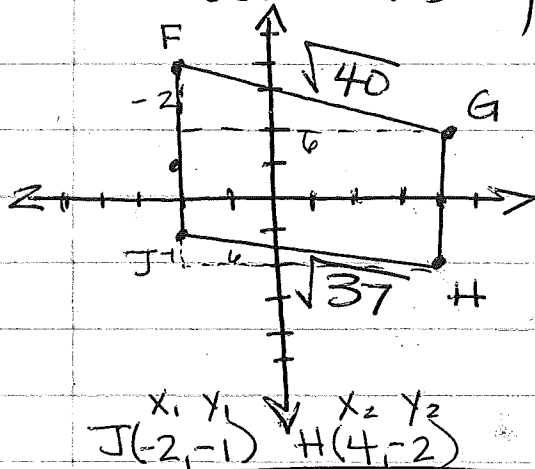


$$\frac{7x}{7} = \frac{56}{7}$$

$$x = 8$$

$$\begin{aligned} 5y - 26 &= 4y + 4 \\ -4y &\quad -4y \\ y - 26 &= 4 \\ +26 &\quad +26 \\ y &= 30 \end{aligned}$$

ex: Determine whether FGHT with  
 $F(-2, 4)$ ,  $G(4, 2)$ ,  $H(4, -2)$ ,  $J(-2, -1)$   
 is a  $\square$  using the distance & slope.



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\begin{array}{cc} F(-2, 4) & G(4, 2) \\ x_1, y_1 & x_2, y_2 \end{array}$$

$$FG = \sqrt{(4 - (-2))^2 + (2 - 4)^2}$$

$$FG = \sqrt{(6)^2 + (-2)^2}$$

$$FG = \sqrt{36 + 4}$$

$$FG = \sqrt{40}$$

$$JH = \sqrt{(4 - (-2))^2 + (-2 - (-1))^2}$$

$$JH = \sqrt{(6)^2 + (-1)^2}$$

$$JH = \sqrt{36 + 1}$$

$$JH = \sqrt{37}$$

NOT A PARALLELOGRAM

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m_{FG} = \frac{-2}{6}$$

$$m_{JH} = \frac{-1}{6}$$

$$m_{FG} = -\frac{1}{3}$$