

Warm Up

Quiz Wednesday

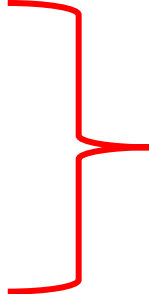
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1. Find the slope of  $(0, 4)$  and  $(-3, 5)$
2. Find the slope of  $(3, -2)$  and  $(6, -3)$
3. Are the lines through each set of points parallel?
4. How do you know?
  
5. Find the slope of  $(0, 0)$  and  $(2, 3)$
6. Find the slope of  $(1, 1)$  and  $(4, -1)$
7. Are the lines through each set of points perpendicular?
8. How do you know?

## 10.1 Slope and Parallel Lines

## 10.2 Slope and Perpendicular Lines

### Review:

- The slope  $m$  of a line between two points  $(x_1, y_1)$  and  $(x_2, y_2)$  where  $x_1 \neq x_2$  is  $m = \frac{y_2 - y_1}{x_2 - x_1}$ .
  - The slope of a horizontal line is 0.
  - The slope of vertical line is undefined.
  - Two lines with slope  $m_1$  &  $m_2$  are parallel if and only if  $m_1 = m_2$ .
  - Two lines with slope  $m_1$  &  $m_2$  are perpendicular if and only if  $m_1 \times m_2 = -1$ . (opposite reciprocals)
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- Horizontal and Vertical lines are perpendicular

## Using Slope to Classify Quadrilaterals by Sides and Diagonals

To show a quadrilateral is a parallelogram, **both** pairs of opposite sides must be parallel.

To show a quadrilateral is a trapezoid, **one pair** of opposite sides must be parallel.

To show a quadrilateral is a rectangle, **all** pairs of consecutive sides must be perpendicular.

To show a parallelogram is a rhombus, the diagonals must be perpendicular.