

NAME Key
 GEOMETRY 3.5-3.6 REVIEW

HOUR _____

1. What is the slope of the line through (-1, 4) and (5, 2)?

$$m = \frac{2-4}{5-(-1)} = \frac{-2}{6} = \boxed{-\frac{1}{3}}$$

2. What is the slope of the line through (3, 6) and (4, 2)?

$$m = \frac{2-6}{4-3} = \frac{-4}{1} = \boxed{-4}$$

3. Which line is perpendicular to $y = 2x + 4$?

opposite
reciprocal
slopes.

A) $y = 2x - 6$ **B) $y = -\frac{1}{2}x + 7$**

4. Complete the sentence. If the product of the slopes of two lines equals -1 , then the lines are perpendicular.

5. Use slopes to determine whether the lines are parallel, perpendicular, or neither. A(1, 5), B(-2, -1), C(1, 1), and D(3, 5), what type of lines are \overline{AB} and \overline{CD} ?

$$AB = \frac{-1-5}{-2-1} = \frac{-6}{-3} = \boxed{2}$$

$$CD = \frac{5-1}{3-1} = \frac{4}{2} = \boxed{2} \quad \text{Parallel}$$

6. Use slopes to determine whether the lines are parallel, perpendicular, or neither. A(-1, 4), B(0, 4), C(2, 0), and D(2, -5), what type of lines are \overline{AB} and \overline{CD} ?

$$AB = \frac{4-4}{0-(-1)} = \frac{0}{1} = \boxed{0}$$

$$CD = \frac{-5-0}{2-2} = \frac{-5}{0} = \boxed{\text{undefined}}$$

Perpendicular

7. What is the equation of the line through (-1, 8) and (4, 18)?

$$m = \frac{18-8}{4-(-1)} = \frac{10}{5} = \boxed{2}$$

$$\boxed{y = 2x + 10}$$

$$\begin{aligned} y &= mx + b \\ 8 &= 2(-1) + b \\ 8 &= -2 + b \\ +2 & \quad +2 \\ 10 &= b \end{aligned}$$

8. Which describes the slope of a horizontal line?

- A) positive **C) zero**
 B) negative D) undefined

9. Which describes the slope of a vertical line?

- A) positive **C) zero**
 B) negative **D) undefined**

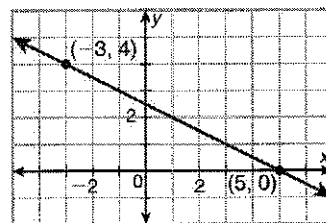
10. What is the equation of the line with slope 3 that goes through (1, 11)?

$$m = 3 \quad \begin{matrix} (1, 11) \\ x \quad y \end{matrix}$$

$$\boxed{y = 3x + 8}$$

$$\begin{aligned} y &= mx + b \\ 11 &= 3(1) + b \\ 11 &= 3 + b \\ -3 & \quad -3 \\ 8 &= b \end{aligned}$$

11. Which is the equation of the line shown in the graph?



$$m = \frac{0-4}{5-(-3)} = \frac{-4}{8} = -\frac{1}{2}$$

$$b = 2.5 = \frac{5}{2}$$

F $y = -\frac{1}{2}x$

H $y = -\frac{1}{2}x + 5$

G $y = -2x + \frac{5}{2}$

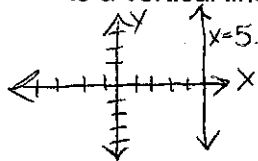
J $y = -\frac{1}{2}x + \frac{5}{2}$

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12. Write *True* or *False*. The graph of $x = 5$ is a vertical line.



True

13. Determine whether the lines are parallel, intersect, or coincide.

$$\begin{array}{r} 3x + 5y = 2 \\ -3x \quad -3x \\ \hline 5y = -3x + 2 \\ \frac{5y}{5} = \frac{-3x + 2}{5} \end{array}$$

$$y = -\frac{3}{5}x + \frac{2}{5}$$

$$3x + 6 = -5y$$

$$\begin{array}{r} 3x + 6 = -5y \\ -5 \quad -5 \quad -5 \\ \hline -\frac{3}{5}x - \frac{6}{5} = y \end{array}$$

$$y = -\frac{3}{5}x - \frac{6}{5}$$

Same Slope
Diff. y-int.

Parallel.

14. Which line coincides with $y = 4x + 2$?

~~A) $y = 4x - 2$~~

~~C) $y = -4x + 2$~~

~~B) $4y = x + 8$~~

D) $8x - 2y = -4$

$$\begin{array}{r} 4y = x + 8 \\ \frac{4y}{4} = \frac{x + 8}{4} \end{array}$$

$$y = \frac{1}{4}x + 2$$

$$\begin{array}{r} 8x - 2y = -4 \\ -8x \quad -8x \\ \hline -2y = -8x - 4 \end{array}$$

$$\frac{-2y}{-2} = \frac{-8x - 4}{-2}$$

$$y = 4x + 2$$

15. Determine whether the lines are parallel, intersect, or coincide.

$$y - 3 = -\frac{1}{2}x \quad y - 5 = 2(x + 3)$$

$$\begin{array}{r} y - 3 = -\frac{1}{2}x \\ +3 \quad +3 \\ \hline y = -\frac{1}{2}x + 3 \end{array}$$

$$y = -\frac{1}{2}x + 3$$

$$y - 5 = 2(x + 3)$$

$$\begin{array}{r} y - 5 = 2x + 6 \\ +5 \quad +5 \\ \hline y = 2x + 11 \end{array}$$

$$y = 2x + 11$$

Diff. Slope

Intersect

16. Determine whether the lines are parallel, intersect, or coincide.

$$3x + 2y = 6 \quad 4y = -6x - 12$$

$$\begin{array}{r} 3x + 2y = 6 \\ -3x \quad -3x \\ \hline 2y = -3x + 6 \\ \frac{2y}{2} = \frac{-3x + 6}{2} \end{array}$$

$$y = -\frac{3}{2}x + 3$$

$$\begin{array}{r} 4y = -6x - 12 \\ \frac{4y}{4} = \frac{-6x - 12}{4} \end{array}$$

$$y = -\frac{6}{4}x - 3$$

$$y = -\frac{3}{2}x - 3$$

Parallel