

# Algebra: Parallel & Perpendicular Lines

Practice Worksheet • numberbender.com

N

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Score: / 10

## DIRECTIONS

Find the equation of a line parallel or perpendicular to the given line through a point.

1 Line through (1,2) perpendicular to:

$$y = 2x + 2$$

Answer: \_\_\_\_\_

2 Line through (2,-1) parallel to:

$$y = -3x + 5$$

Answer: \_\_\_\_\_

3 Line through (0,3) perpendicular to:

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

Answer: \_\_\_\_\_

4 Line through (-1,4) perpendicular to:

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

Answer: \_\_\_\_\_

5 Line through (3,0) parallel to:

$$y = \frac{3}{4}x + 5$$

Answer: \_\_\_\_\_

6 Line through (-2,-3) perpendicular to:

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

Answer: \_\_\_\_\_

7 Line through (1,-2) perpendicular to:

$$y = 4x + 2$$

Answer: \_\_\_\_\_

8 Line through (0,5) perpendicular to:

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

Answer: \_\_\_\_\_

9 Line through (-3,1) perpendicular to:

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

Answer: \_\_\_\_\_

10 Line through (2,4) parallel to:

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

Answer: \_\_\_\_\_

# Answer Key & Solutions

Algebra: Parallel & Perpendicular Lines • Numberbender

N

**TEACHER NOTES** Parallel: same slope. Perpendicular: negative reciprocal slope ( $m \cdot m = -1$ ).

1 Line through (1,2) perpendicular to:

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

$$y = 2x + 2$$

2 Line through (2,-1) parallel to:

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

$$y = -3x + 5$$

3 Line through (0,3) perpendicular to:

$$= y = -2x + 3$$

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

4 Line through (-1,4) perpendicular to:

$$= y = \frac{3}{2}x + \frac{11}{2}$$

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

5 Line through (3,0) parallel to:

$$= y = \frac{3}{4}x + -\frac{9}{4}$$

$$y = \frac{3}{4}x + 5$$

6 Line through (-2,-3) perpendicular to:

$$= y = 3x + 3$$

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

7 Line through (1,-2) perpendicular to:

$$= y = -\frac{1}{4}x + -\frac{7}{4}$$

$$y = 4x + 2$$

8 Line through (0,5) perpendicular to:

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

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

9 Line through (-3,1) perpendicular to:

$$= y = -4x + -11$$

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

10 Line through (2,4) parallel to:

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

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