

Vocabulary Check:

- To decide if lines are parallel or perpendicular, first write the lines in Slope - intercept form, which is $y = mx + b$.
- Parallel lines have slopes that are the EXACT same.
- Perpendicular lines have slopes that are opposite signs reciprocals.
(positive/negative) (flipped fraction)

State whether the lines are parallel, perpendicular, or neither. (Make sure to show your work!)

1. $y = 6x - 3$
 $y = -\frac{1}{6}x + 7$

2. $y = 3x + 2$
 $2y = 6x - 6$

3. $8x - 2y = 3$
 $x + 4y = -1$

Perpendicular

Parallel

Perpendicular

4. $3x + 2y = 5$
 $3y + 2x = -3$

5. $y - 5 = 6x$
 $y - 6x = -1$

6. $y = 3x + 9$
 $y = \frac{1}{3}x - 4$

Neither

Parallel

Neither

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

8. $y = 6$
 $x = -2$

9. $3y = -x$
 $3x = y$

Parallel

Perpendicular

Perpendicular

Write an equation of the line that passes through the given point and is perpendicular to the given equation.

10. $(0, -2); y = \frac{1}{2}x + 6$

$$y = -2x - 2$$

11. $(-8, 5); y = -4x + 2$

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

Write an equation of the line that passes through the given point and is parallel to the given equation.

12. $(-3, 4); y = \frac{2}{3}x - 1$

$$y = \frac{2}{3}x + 6$$

13. $(-1, -4); 9x + 3y = 8$

$$y = -3x - 7$$