Geometry

Parallel Lines Supplemental Practice Worksheets

Slope: \[ m = \frac{y_2 - y_1}{x_2 - x_1} \]

Point-Slope Form: \( y - y_1 = m(x - x_1) \)

Slope-Intercept Form: \( y = mx + b \)
Write an equation of the line given the slope and the y-intercept then graph the line.

1. The slope is 2; the y-intercept is 3.

2. The slope is 5; the y-intercept is 0.

3. The slope is 4; the y-intercept is -3.

4. The slope is -5; the y-intercept is 1.

5. The slope is -3; the y-intercept is -2.

6. The slope is -6; the y-intercept is $-\frac{3}{5}$.
7. The slope is \( \frac{1}{2} \); the y-intercept is -8.

8. The slope is \( \frac{3}{4} \); the y-intercept is 9.

9. The slope is \( \frac{1}{5} \); the y-intercept is 3.

10. The slope is \( -\frac{4}{5} \); the y-intercept is -7.

11. The slope is \( \frac{1}{3} \); the y-intercept is \( \frac{2}{3} \).

12. The slope is \( -\frac{4}{3} \); the y-intercept is \( \frac{7}{8} \).
Write the equation of the line shown in the graph.

13. ________________________________

14. ________________________________

15. ________________________________

16. ________________________________

17. ________________________________

18. ________________________________
Worksheet 10-2   Point - Slope

Write an equation of the line that passes through the point and has the given slope. Write the equation in slope-intercept form.

1. \((2, 4), m = 3\)  
2. \((3, 5), m = -1\)

3. \((-2, 6), m = 4\)  
4. \((7, -2), m = -3\)

5. \((0, -5), m = \frac{-1}{3}\)  
6. \((-4, 1), m = -\frac{1}{2}\)

7. \((0, 8), m = 6\)  
8. \((-2, -1), m = 5\)

9. \((-4, -5), m = -\frac{1}{2}\)  
10. \((2, 8), m = 0\)

11. \((-3, 0), m = 4\)  
12. \((3, -6), m = \frac{1}{3}\)

Write the slope-intercept form of the equation of the given line.

13. _________________________  
14. _________________________
19. **Apartment Rent**  Between 1980 and 1990, the monthly rent for a one-bedroom apartment increased by $20 per year. In 1987 the rent was $350 per month. Find an equation that gives the monthly rent in dollars, y, in terms of the year, t. Let t = 0 correspond to 1980.

20. **Stamp Collection**  Between 1985 and 1992, you added approximately 15 stamps per year to your stamp collection. In 1990 you had 130 stamps. Find an equation that represents the number of stamps in your collection, y, in terms of the year, t. Let t = 0 correspond to 1985.
Worksheet 10-3A   Two Points

Write the slope-intercept form of the equation of the line that passes through the two points.

1. \((2, 3), (6, 11)\)

2. \((4, 2), (3, 5)\)

3. \((3, -2), (-6, 1)\)

4. \((0, 4), (-1, 3)\)

5. \((-5, -6), (2, 8)\)

6. \((1, -7), (3, -15)\)

7. \((-5, 9), (-2, 0)\)

8. \((-6, -2), (-10, -14)\)
Given each graph find two integer points. Then write the slope-intercept form of the equation of the line that passes through the two points.

1. Point 1 ( , ) Point 2 ( , )
   Equation ________________

2. Point 1 ( , ) Point 2 ( , )
   Equation ________________

3. Point 1 ( , ) Point 2 ( , )
   Equation ________________
4.

Point 1 ( , )  Point 2 ( , )

Equation ____________________________

5.

Point 1 ( , )  Point 2 ( , )

Equation ____________________________

6.

Point 1 ( , )  Point 2 ( , )

Equation ____________________________
Find: a) the slope of a line parallel to the graph of each equation. 
b) the slope of a line perpendicular to the graph of each equation.

1. \(4x - 5y = 12\) 
2. \(y = \frac{2}{7}x + 1\) 
3. \(x = -4\) 
4. \(y = \frac{-1}{2}x + 10\) 
5. \(-5x + 5y = 3\) 
6. \(-x + 3y = 6\)

Write an equation for the line that is:
 a) parallel to the given line and that passes through the given point. 
b) perpendicular to the given line and that passes through the given point.

10. \((6, 4)\) \(y = 3x - 2\) 
11. \((-5, 5)\) \(y = -5x + 9\) 
12. \((-1, -4)\) \(y = \frac{1}{6}x + 1\) 
13. \((1, 1)\) \(y = \frac{-1}{4}x + 7\) 
14. \((12, -6)\) \(y = 4x + 1\) 
15. \((0, -3)\) \(y = \frac{-4}{3}x - 7\)
Write an equation that is parallel to the given line through the given point and verify by graphing both lines.

16. (3, 4) \[ y = 2x - 7 \]

17. (1, 3) \[ -7x - 3y = 3 \]

Write an equation that is perpendicular to the given line through the given point and verify by graphing both lines.

18. (-5, 5) \[ y = -5x + 9 \]

19. (1, 1) \[ 3x - 5y = 10 \]