Math 1 2.6 Parallel and Perpendicular Lines Unit 2 Day 6

*SWBAT classify lines as parallel, perpendicular, or neither, and write the equations of parallel and perpendicular lines.*

|  |  |  |
| --- | --- | --- |
|  | **Parallel Lines** | **Perpendicular Lines** |
| **Picture (Graph)** |  |  |
| **Things you already know** | *
*
*
*
 | *
*
*
 |
| **Definition** |  |  |
| **Example** |  |  |

**Writing an Equation of a Parallel Line:** *Find the parallel slope first, then substitute the point into y = mx + b.*

1. A line passes through (12, 5) and is parallel to the graph of $y=\frac{2}{3}x-1$. What equation represents the line in slope-intercept form?
2. A line passes through (-3, -1) and is parallel to the graph of $y=2x+3$. What equation represents the line in slope-intercept form?

**Writing an Equation of a Perpendicular Line:** *Find the perpendicular slope first, then substitute the point into y = mx + b.*

1. Write the equation of a line that passes through (2, 4) and is perpendicular to the graph of $y=\frac{1}{3}x-1$.
2. A line passes through (1, 8) and is perpendicular to the graph $y=2x+1$. What equation represents the line in slope-intercept form?

**Parallel and Perpendicular Lines Worksheet**

Write the equation in slope intercept form of the line parallel and line perpendicular to given line through given point. **Parallel Perpendicular**

1) y = 4x + 7 (─2, ─9) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) 2x ─ 5y = 10 (3, ─7) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) 3x + 4y = 16 (12, ─5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the equation of the perpendicular bisector of.

4) A (3, ─6) B (7, 2) 5) A (2, 5) B (6, ─7)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6) A (8, 1) B (0, ─1) 7) A (7, 9) B (1, 5)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_