**Parallel Lines Notes**

**Key Points**

* Two lines are \_\_\_\_\_\_\_\_\_\_\_\_\_ if they have the \_\_\_\_\_\_\_\_\_\_\_\_ slope and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ y-intercepts.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ lines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ intersect
* Symbol for Parallel: \_\_\_\_\_

**Are the two lines parallel? How do you know?**

Ex.  and  Ex. -6x + 8y = -24 and 

Ex.  and 2x + 6y = 12

**You Try**

1. 4x + 2y = 8 and  2.  and 3x + 2y = 8

**Writing a Parallel Line:**

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

Ex.  and (1,1) Step 1:

Step 2:

Step 3:

Ex.  and (0,0)

**You Try! ☺**

1.  and (2,-3) 2.  and (-3,0)

**HW Parallel and Perpendicular 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Parallel lines Practice: Parallel lines have the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Standard Form | Slope intercept form | Slope | Slope of line parallel to the given line | Given Point | Point slope form | Slope intercept form |
| 1 | 4x – 3y = 2 |  |  |  | (4,0) |  |  |
| 2 | x – y = 2 |  |  |  | (2,-7) |  |  |
| 3 | x – y = 5 |  |  |  | (2,3) |  |  |
| 4 | 2x + 3y = -1 |  |  |  | (-5,-4) |  |  |
| 5 | x – 3y = 8 |  |  |  | (5,-4) |  |  |
| 6 | 2x – 3y = 6 |  |  |  | (1,-2) |  |  |
| 7 | 2x + y = 7 |  |  |  | (1,-2) |  |  |

**Perpendicular Lines Notes**

**Key Points:**

* Two lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ if the \_\_\_\_\_\_\_\_\_\_\_\_ of their slopes is \_\_\_\_\_.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ are lines that intersect at a \_\_\_\_\_ angle.
* The \_\_\_\_\_\_\_\_\_ of two numbers is \_\_\_\_ if one number is the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ of the other.

MCj03487250000[1] Ex. , the negative reciprocal is… Ex. -3, the negative reciprocal is…

You Try!!

Ex. 2, the negative reciprocal is…

**Writing Equations:**

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

Ex. y=2x+4, (1, 4) Steps:

1. Identify the \_\_\_\_\_\_\_\_.
2. Find the \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_.
3. Use \_\_\_\_\_\_-\_\_\_\_\_\_ equation to find an equation.
4. Put in \_\_\_\_\_\_\_-\_\_\_\_\_\_\_ form.

Ex. 4x + 6y = 12, (3, 2)

**You Try! ☺**

Ex. y=4x + 8, (4, 2) Ex. 3x + 5y = 7, (-1, 2)

**HW Parallel and Perpendicular 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Perpendicular Lines Practice: Perpendicular lines have \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ slopes.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Standard Form | Slope intercept form | Slope | Slope of the line perpendicular to the given line | Given Point | Point slope form | Slope intercept form |
| 1 | 2x – 9y = 5 |  |  |  | (6, -13) |  |  |
| 2 | x – 3y = -6 |  |  |  | (-3, 1) |  |  |
| 3 | x + 3y = 3 |  |  |  | (6, -1) |  |  |
| 4 | 5x – 3y = 7 |  |  |  | (8, -2) |  |  |
| 5 | 4x – 3y = 2 |  |  |  | (4, 0) |  |  |