3.6- Slopes of Parallel & Perpendicular Lines – Notes Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Targets** | **Help!** | **I’m getting there…** | **I’m almost there…** | **Yes! I totally got this! ☺** |
| 1. I can identify that slopes of parallel lines are equal. |  |  |  |  |
| 2. I can identify that slopes of perpendicular lines are opposite reciprocals. |  |  |  |  |
| 3. I can write equations of lines that are parallel or perpendicular to a given line and through a point. |  |  |  |  |
| 4. I can determine the relationship between lines (parallel, perpendicular, or neither) based on slopes. |  |  |  |  |



\*\*Parallel Lines: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



\*\*Perpendicular Lines: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Example 1:



a) If line 1 is parallel to line 2 & line 2 is represented by the equation , what do we know about line 1?



b) If line 1is perpendicular to line 2 & line 2 is represented by the equation , what do we know about line 1?



Example 2: Tell if the lines are parallel, perpendicular, or neither.



a) Line 1: Through (1, 5) and (-2, -4) b) Line 1: 



Line 2: Through (1, -4) and (3, 3) Line 2: 



c) Line 1: Through (-5, -2) and (-1, -5)



Line 2: Through (-2, 3) and (6, -3)



Writing Equations of Parallel Lines:



Step 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Step 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Step 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Ex. 3: Write an equation for the line parallel to y = -4x + 3 that contains (1, -2)



Ex. 4: Write the equation of the line parallel to 2x + 4y = 6 and contains (6, -2).



Writing Equations for Perpendicular Lines:



Step 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Step 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Step 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Ex. 5: Write an equation for the line perpendicular to y = -3x – 5 that contains (-3, 7).



Ex. 6: Write an equation for the line perpendicular to x + 4y = 3 that contains (0, -2).

