College Algebra Fundamentals

Section P-4 (Part 4): Lines in the Plane and Slope

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**:

* Students will be able to write equations parallel and perpendicular to another equation.

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| **Main Idea** | **Notes** |
| **Vocabulary:****Example 1: Parallel Lines****Example 2: Writing Equations for Parallel Lines****Vocabulary:** | Two distinct nonvertical lines are **parallel** if and only if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Are the two lines parallel?L1: through (-2, 1) and (4, 5) and L2: through (3, 0) and (0, -2)Write an equation for the line through (5, 7) parallel to 2x – 5y = 15. Two nonvertical lines are **perpendicular** if and only if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.Examples of perpendicular slopes:2/3 and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1/5 and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -2 and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2.4 and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -7/2 and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Notice: The product of perpendicular slopes is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Example 3: Parallel, Perpendicular, or Neither?** | Write parallel, perpendicular or neither for the pair of lines that passes through (5, -9) and (3, 7) and the line through (0, 2) and (8, 3).What is the slope of the line perpendicular to a horizontal line?Horizontal lines are perpendicular to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lines.Write an equation for the line through (-8, 3) perpendicular to 2x – 3y = 10. |
| **Vocabulary:****Example 4: Writing Equations for Perpendicular Lines** |
| **Vocabulary:** | Summary of Special Slopes:1. Horizontal lines:
2. Vertical lines:
3. Parallel lines:
4. Intersecting lines:
5. Perpendicular lines:
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| **Homework:** |  |