Name_____ Date _____

Day 4 – Parallel and Perpendicular Lines

Parallel Lines:

Graphs: Lines _____ intersect and are in the _____ plane.

Equations:

- _____ Slopes
- _____ y - intercepts

Are these lines parallel?

1. $y = -2x + 1$ and $y = -2x – 4$

2. $y = 3x – 4$ and $y = 1 + 3x$

How to Write an Equation of a Line PARALLEL to another and given a point.

1. Given equation should be solved for _____ ($y = mx + b$).
2. Write down the _____ of that line.
3. Substitute _____ and (x_1, y_1) into $y = mx + b$.
4. Solve for _____.
5. Write the equation of the line with the slope and new y-intercept.

3. Write a line parallel to the line $y = -4x + 1$ and passes through the point (2, -1).

4. Write a line parallel to the line $y = 3x – 5$ and passes through the point (-5, -2).

5. Write a line parallel to the line $y = -x – 7$ and passes through the point (-4, -4).

6. Write a line parallel to the line $2x + y = 3$ and passes through the point (-2, 5).

Perpendicular Lines:

Graphs: Lines intersect at a_____ angle.

Equations:

- _____ _____ Slopes

How to Write an Equation of a Line PERPENDICULAR to another and given a point.

1. Given equation should be solved for _____ (y = mx + b).

2. Write down the _____ _____ slope of that line.

3. Substitute _____ and (x_1, y_1) into y = mx + b.

4. Solve for _____.

5. Write the equation of the line with the NEW slope and NEW y-intercept.

1. Write a line perpendicular to the line $y = \frac{1}{2}x - 2$ and passes through the point (1, 0).

2. Write a line perpendicular to the line y = -3x +2 and passes through the point (6, 5).

3. Write a line perpendicular to the line 2x + 3y = 9 and passes through the point (6, -1).

4. For what value of n are the lines 2x + 4y = 5 and nx + 4y = 5 perpendicular?

5. For what value of n are the lines 7x + 3y = 8 and nx + 3y = 8 perpendicular?