Unit 4
Day 8

Parallel and Perpendicular Lines

Name Key
Date _____ Period ____

1) Use the equation $y = -\frac{2}{5}x - 2$ to answer the questions below.

a) What is the slope of a line that would be parallel to the above equation? $-\frac{2}{5}$ (same slope)

b) What is the slope of a line that would be perpendicular to the above equation? $\frac{5}{2}$ (opp. reciprocal)

2) Determine if the lines are parallel, perpendicular, or neither.

$2x - 5y = -3$ *and* $5x + 2y = 6$

$-5y = -2x - 3$

$\frac{-5y}{-5} = \frac{-2x}{-5} - \frac{3}{-5}$

$y = \frac{2}{5}x + \frac{3}{5}$

$2y = -5x + 6$

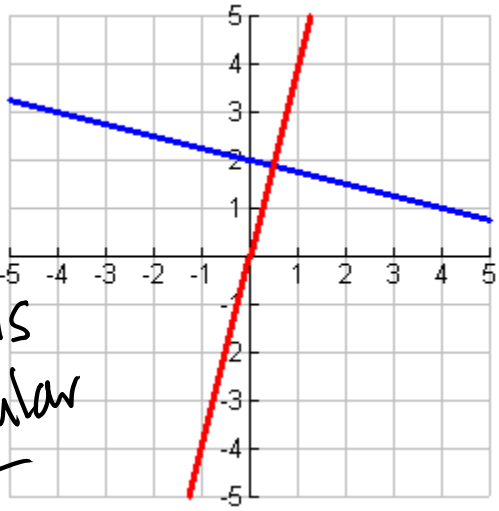
$\frac{2y}{2} = \frac{-5x}{2} + \frac{6}{2}$

$y = -\frac{5}{2}x + 3$

* get into $y = mx + b$

* opp. reciprocals

* perpendicular



Unit 4
Day 10

Parallel and Perpendicular Lines

Name _____
Date _____ Period ____

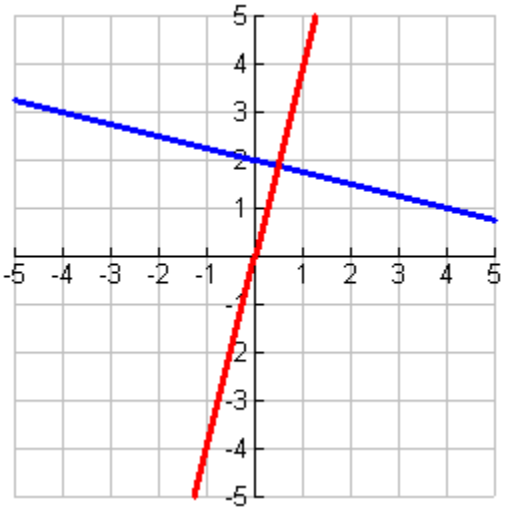
1) Use the equation $y = -\frac{2}{5}x - 2$ to answer the questions below.

c) What is the slope of a line that would be parallel to the above equation? _____

d) What is the slope of a line that would be perpendicular to the above equation? _____

2) Determine if the lines are parallel, perpendicular, or neither.

$2x - 5y = -3$ *and* $5x + 2y = 6$



For 3-4, write an equation of the line that passes through the given point and is perpendicular to the given line. Write one equation in Slope-Intercept Form and another in Point-Slope Form.

3) (-6, 7), $y = \frac{1}{4}x - 1$

x y

$m = -4$

$y = mx + b$

$7 = -4(-6) + b$

$7 = 24 + b$

$-17 = b$

$y = -4x - 17$

4) (2, 9), $4x + y = 3$

$x_1\ y_1$

$y = -4x + 3$

$m = \frac{1}{4}$

$y - 9 = \frac{1}{4}(x - 2)$

5) Write a linear equation in standard form that is parallel to the line $4x + 2y = 8$ and passes through the point (-6, 3).

x y

same

$\frac{2y}{2} = \frac{-4x}{2} + \frac{8}{2}$

$y = -2x + 4$

$m = -2$

$y - 3 = -2(x + 6)$

$y - 3 = -2x - 12$

$2x + y = -9$

For 3-4, write an equation of the line that passes through the given point and is perpendicular to the given line. Write one equation in Slope-Intercept Form and another in Point-Slope Form.

3) (-6, 7), $y = \frac{1}{4}x - 1$

4) (2, 9), $4x + y = 3$

5) Write a linear equation in standard form that is parallel to the line $4x + 2y = 8$ and passes through the point (-6, 3).