

Name: _____

Date: _____

Notes

Algebra Section 5.5

Pages 319-324



Goal: “You will write equations of parallel and perpendicular lines”

Vocabulary:

Parallel: Two lines are always the same _____ apart and will never _____.

Parallel lines have the same _____.

Symbol:

Perpendicular: Two lines that _____ to form a _____.

The _____ of _____ lines are _____.

Ex: 5 and $-\frac{1}{5}$ $-\frac{2}{3}$ and $\frac{3}{2}$ $\frac{1}{3}$ and ?

Symbol:

Write an Equation with the Given Information:

1) Passes through $(-3, -5)$ | | to $y = 3x - 1$

2) What do you know? $x =$ $y =$ $m =$ $b =$

3) Plug the known values into $y = mx + b$.

4) Solve for the unknown value.

5) Write the equation.

Plug in the values for m and b .

Leave x and y as variables.

Try These: Follow the steps above.

1) Passes through $(-2, 11)$ | | to $y = -x + 5$

2) Passes through $(-3, 3)$ | | to $y + 2x = 1$

Determine which lines, if any, are parallel or perpendicular: (put in slope-intercept form first)

1.

a. $y = 5x - 3$

b. $x + 5y = 2$

c. $-10y - 2x = 0$

2.

a. $y = -3x + 1$

b. $-x + 3y = 1$

c. $2x - 6y = 4$

3.

a. $-1.5y + 4.5x = 6$

b. $y = 3x - 8$

c. $2x + 6y = -3$

Write the equation of the line with the given information:

1) Passes through $(4, -5) \perp$ to $y = 2x + 3$

2) What do you know? $x =$ $y =$ $m =$ $b =$

3) Plug in the known values into $y = mx + b$.

4) Solve for the unknown value.

5) Write the equation.

Plug in the values for m and b .

Leave x and y as variables.

Try These:

1) Passes through $(4, 3) \perp$ $y = 4x - 7$

2) Passes through $(4, -2) \perp$ $y - 4x = 2$