Proudly Completed By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Perpendicular line equations**



1. On the graph, plot the following lines: y = x – 3 and y = – 2x + 5
2. What do you notice about the two lines?

\_They are perpendicular\_\_\_\_\_\_\_\_\_\_

1. How are the slopes related in both lines?

\_\_\_Negative and flipped\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How can you tell, just by looking at the equation, that two lines have the property mentioned above?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_They are the inverse reciprocal\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. On the graph, plot the following lines: 2y + 6x = 8 and 12y – 4x = – 24
2. What do you notice about the two lines?

\_\_\_\_\_They are perpendicular\_\_\_\_\_

1. How are the slopes related in both lines?

\_\_\_\_\_\_\_\_\_\_Flipped and negative\_\_\_\_\_\_\_

1. How can you tell, just by looking at the equation, that two lines have the property mentioned above?

\_\_\_\_\_\_\_\_\_They are negative reciprocals\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write equations of three lines that are perpendicular to the line with equation y = -3x + 7

 \_\_\_y = 1/3x +1\_\_\_\_\_\_\_\_\_\_\_

 \_\_y = 1/3x - 7\_\_\_\_\_

 \_\_\_y = 1/3x + 2\_\_\_\_\_

1. Which equation represents a line perpendicular to the line whose equation is 2x + 3y = 12?

[A] 2y = -3x + 6

[B] 6y = -4x + 12

[C] 3y = -2x + 12

**[D] 2y = 3x + 6**

1. Which equation represents a line that is perpendicular to the line whose equation is: -2y = 3x+7?

[A] y = x+7 

**[B] y = x – 3**

[C] y = x – 3

[D] 2y = 3x – 3

1. Which equation represents a line that is perpendicular to the line whose equation is: 5y +6 = -3x?

[A] y = x + 7

**[B] y = x + 7**

[C] y = x + 7

[D] y = x + 7

1. The lines 3y + 1 = 6x + 4 and 2y + 1 = x – 9 are

**[A] neither parallel nor perpendicular**

[B] perpendicular

[C] the same line

[D] parallel

1. Which of the lines is not perpendicular to 2*x*+*y*=8?

[A]2*y*−*x* = 4

[B] *x*−2*y* = 3

**[C] 2*x*−*y* = 4**

[D] *y*−= 6

1. Determine if the two lines 7*x* + 5*y* = 35 and *y* = *x*+5 are *parallel*, *perpendicular*, or *neither*. Show all your work below.

Answer: **Perpendicular**

1. Given two lines whose equations  and determine the value of b such that the two lines will be perpendicular.

Answer: **6**