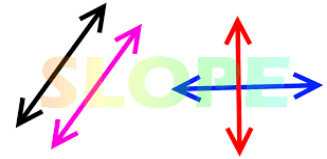


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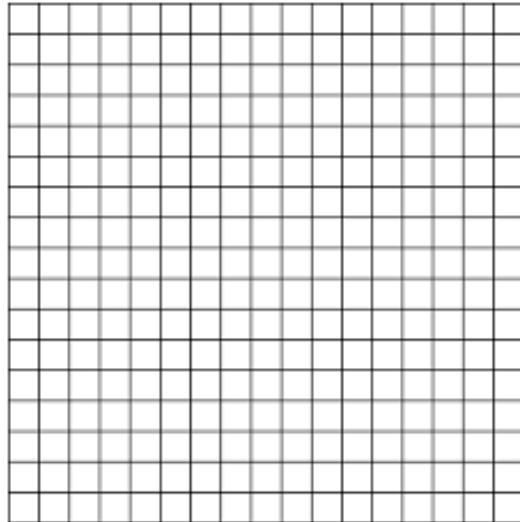
6.4 Parallel and Perpendicular Lines



Let's take a look at the last two questions on yesterday's handout.

8. Graph the following pair of lines using a method of your choice. What do you notice about them? How could you use the equations to tell that this would happen?

$$y = -2x + 5$$
$$2x + y = -4$$



9. Graph the following pair of lines using a method of your choice. What do you notice? State the slope of each line.

$$y = 2x - 1$$
$$x + 2y + 4 = 0$$

What part of the equation tells you if two lines are parallel, perpendicular, or neither?



Vocabulary

parallel lines - lines that run in the same direction and NEVER cross

perpendicular lines - lines that meet at a 90 degree angle

When we are looking at slope to decide if lines are parallel, what are we looking for?

Example: What is the slope of a line parallel to $y = -3x + 4$? What about $3x - 2y + 5 = 0$?

When we are looking at slope to decide if lines are perpendicular, what are we looking for?

Example: What is the slope of a line perpendicular to $y = \frac{2}{3}x + 1$? What about $x - 2y + 4 = 0$?

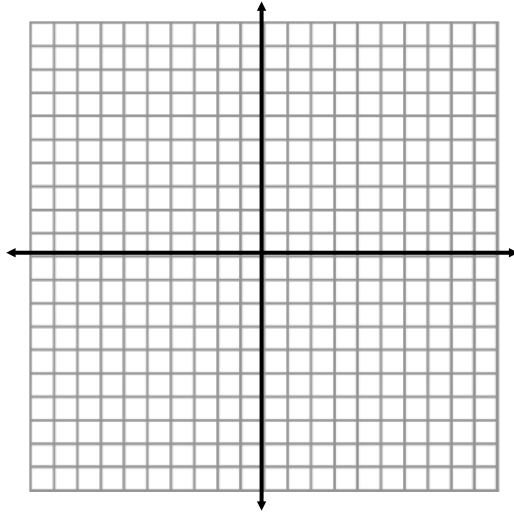
Practice Problems

1. Write the equation of a line parallel to $y = -5x + 7$.
2. Write the equation of a line perpendicular to $y = -5x + 7$.



3) A triangle has vertices $A(-1, 2)$, $B(2, -1)$, and $C(7, 4)$.

a) Plot the points and draw the triangle.



b) Does this appear to be a right triangle? Explain.

c) Find the slopes of the sides of the triangle (all three of them).

d) Use the slopes to support your conclusion in part b.

*e) Find the perimeter of the triangle.

