

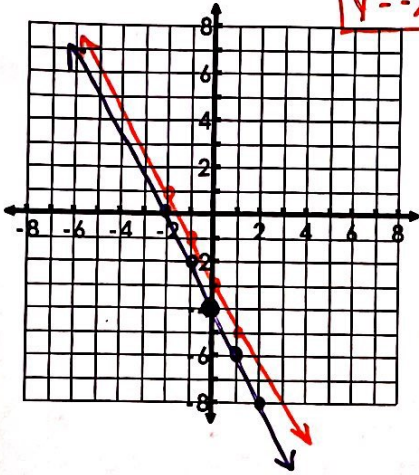
Day 3: Parallel & Perpendicular Lines on a Graph Practice

Name: Key

Directions: Determine the equation of the line for the given information using a graph. Then check your work using algebra.

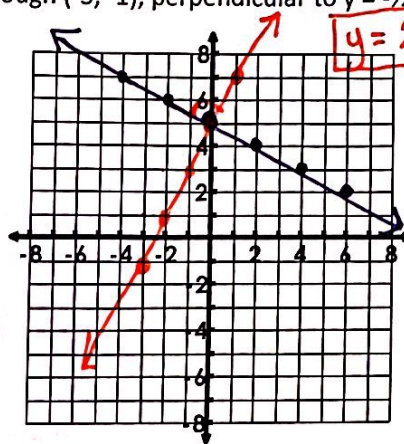
1. Through  $(-1, -1)$ , parallel to  $y = -2x - 4$

$y = -2x - 3$



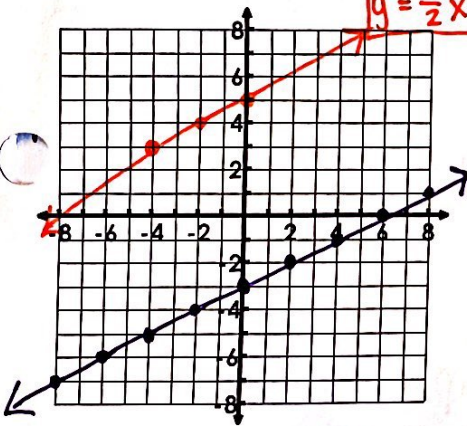
2. Through  $(-3, -1)$ , perpendicular to  $y = -\frac{1}{2}x + 5$

$y = 2x + 5$



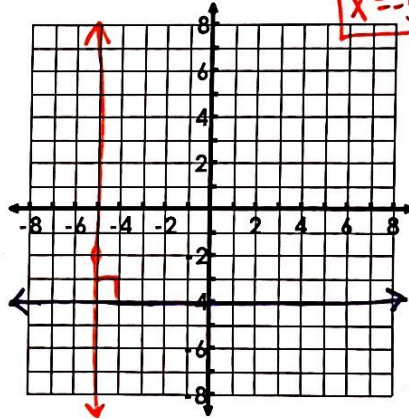
3. Through  $(-4, 3)$ , parallel to  $y = \frac{1}{2}x - 3$

$y = \frac{1}{2}x + 5$



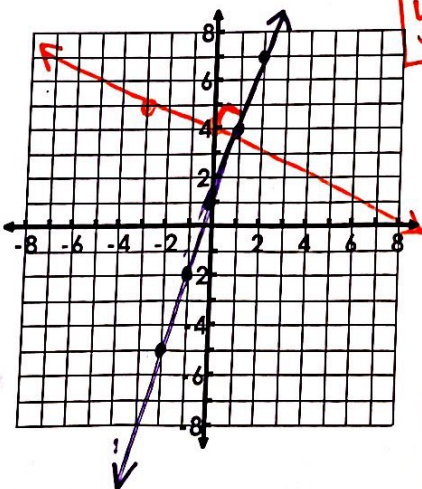
4. Through  $(-5, -2)$ , perpendicular to  $y = -4$

$x = -5$



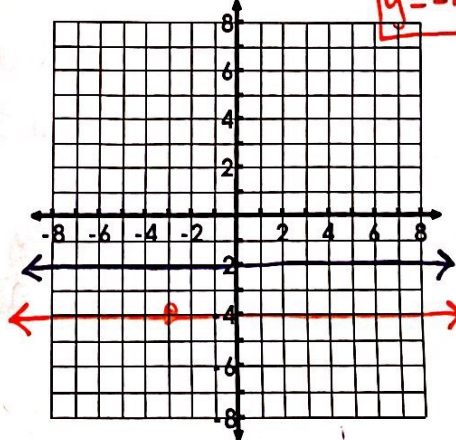
5. Through  $(-3, 5)$ , perpendicular to  $y = 3x + 1$

$y = -\frac{1}{3}x + 4$



6. Through  $(-3, -4)$ , parallel to  $y = -2$

$y = -4$



7. Determine if any of the given lines are parallel or perpendicular to each other:

A.  $y = \boxed{3/5}x + 1$

B.  $5y = 3x - 2 \rightarrow y = \boxed{3/5}x - 2/5$

C.  $10x - 6y = -4 \rightarrow -\frac{6y}{6} = \frac{-10x - 4}{-6}$   
 $y = \boxed{5/3}x + 2/3$

A & B are parallel

8. Determine if any of the given lines are parallel or perpendicular to each other:

A.  $4x - 3y = 2$

B.  $3x + 4y = -1$

C.  $4y - 3x = 20$

$4x - 3y = 2$

$-\frac{3y}{-3} = \frac{-4x + 2}{-3}$

$y = \boxed{4/3}x - 2/3$

$3x + 4y = -1$

$\frac{4y}{4} = \frac{-3x - 1}{4}$

$y = \boxed{-3/4}x - 1/4$

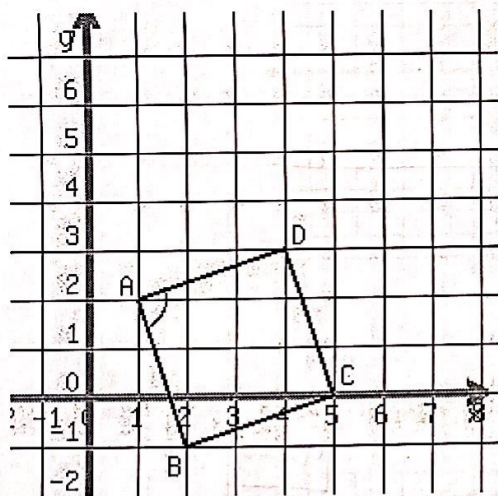
$4y - 3x = 20$

$\frac{4y}{4} = \frac{3x + 20}{4}$

$y = \frac{3}{4}x + 5$

A & B are perpendicular

9. Prepping for Tomorrow: Use the picture to answer the following:



a. Is  $\angle D$  a right angle? Explain how you know.

Do the lines intersect at  $90^\circ$ ? Perpendicular?

Slope of  $\overline{AD}$ :  $1/3$

Slope of  $\overline{DC}$ :  $-3$

Yes, slopes are negative reciprocals, so the lines are perpendicular.

b. Is  $\overline{AD}$  parallel to  $\overline{BC}$ ? Explain how you know.

Are the slopes the same?

Slope of  $\overline{AD}$ :  $1/3$

Slope of  $\overline{BC}$ :  $1/3$

Yes  $\overline{AD}$  is parallel to  $\overline{BC}$  since the slopes are the same.