

BELLWORK: Monday, October 13<sup>th</sup> Bell Work

Skill: Solve the following problems below

1.  $1 - 9 =$
2.  $-1 - 10 =$
3.  $-2 + 8 =$
4.  $2 - (-10) =$

Concept: Find the slope between the two points given below.

1.  $(3,4)(-2,7)$

Extension: Write the equation of the line between the two points.

1.  $(2,4)(10,20)$

**Read the agenda, in red, to the right of the screen!**

BELLWORK: Monday, October 13<sup>th</sup> Bell Work

Skill: Solve the following problems below

1.  $1 - 9 = -8$
2.  $-1 - 10 = -11$
3.  $-2 + 8 = 6$
4.  $2 - (-10) = 12$

Concept: Find the slope between the two points given below.

1.  $(3,4)(-2,7)$

$$m = \frac{3}{-5}$$

$$m = -\frac{3}{5}$$

Extension: Write the equation of the line between the two points.

1.  $(2,4)(10,20)$

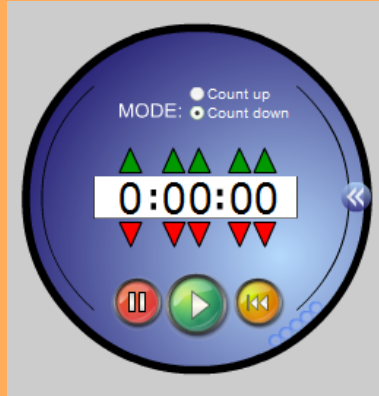
$$m = \frac{16}{8} = 2$$

$$y - 4 = 2(x - 2)$$

$$y - 4 = 2x - 4$$

$$\boxed{y = 2x}$$

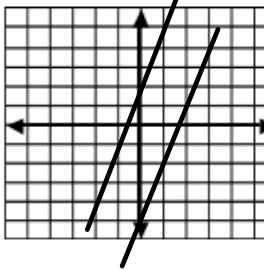
# Homework Check/Questions



Graph both equations on the same coordinate plane.

A.  $y = 3x - 5$

$y = 3x + 2$

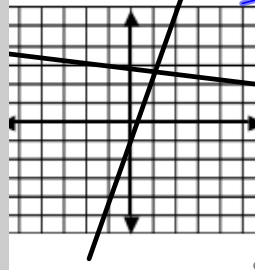


The graphs of these lines are:  
parallel lines.

The equations of these lines have the  
same slope  
and diff. y-int.

B.  $y = 4x - 1$

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



The graphs of these lines are:  
perpendicular lines. intersect and form right angles

The equations of these lines have slopes that are  
the opposite and the  
reciprocal of each other.

proof [ product of the slopes = -1 ]

Handwritten notes in blue ink:  
 $\frac{4}{-1}$   
 $\frac{4}{1} \cdot \frac{-1}{4}$   
 $-\frac{4}{4} = -1$

## Steps for writing equations that are parallel or perpendicular

### STEPS:

- Find the slope of the given equation. (first equation)
- Determine the relationship (parallel or perpendicular)
- Plug in a point and the new slope into point-slope form.
- Simplify to convert the equation into slope-intercept form.

## Guided Practice

Equation	Parallel	Perpendicular
$y = \frac{3}{2}x + 6$ through the point (4, 5)	$m = \frac{3}{2}$ $y - 5 = \frac{3}{2}(x - 4)$ $y - 5 = \frac{3}{2}x - 6$ $y = \frac{3}{2}x - 1$	$m = -\frac{2}{3}$ $y - 5 = -\frac{2}{3}(x - 4)$ $y - 5 = -\frac{2}{3}x + \frac{8}{3}$ $y = -\frac{2}{3}x + \frac{8}{3} + \frac{15}{3}$ $y = -\frac{2}{3}x + \frac{23}{3}$

## Guided Practice

only need slope

$y = -\frac{3}{4}x + 2$   
 and through  
 (6, -4)

$$m = -\frac{3}{4}$$

$$y + 4 = -\frac{3}{4}(x - 6)$$

$$y + 4 = -\frac{3}{4}x + \frac{18}{4}$$

$$y = -\frac{3}{4}x + \frac{18}{4} - \frac{16}{4}$$

$$y = -\frac{3}{4}x + \frac{1}{2}$$

$$m = \frac{4}{3}$$

$$y + 4 = \frac{4}{3}(x - 6)$$

$$y + 4 = \frac{4}{3}x - \frac{24}{3}$$

$$y + 4 = \frac{4}{3}x - 8$$

$$y = \frac{4}{3}x - 12$$