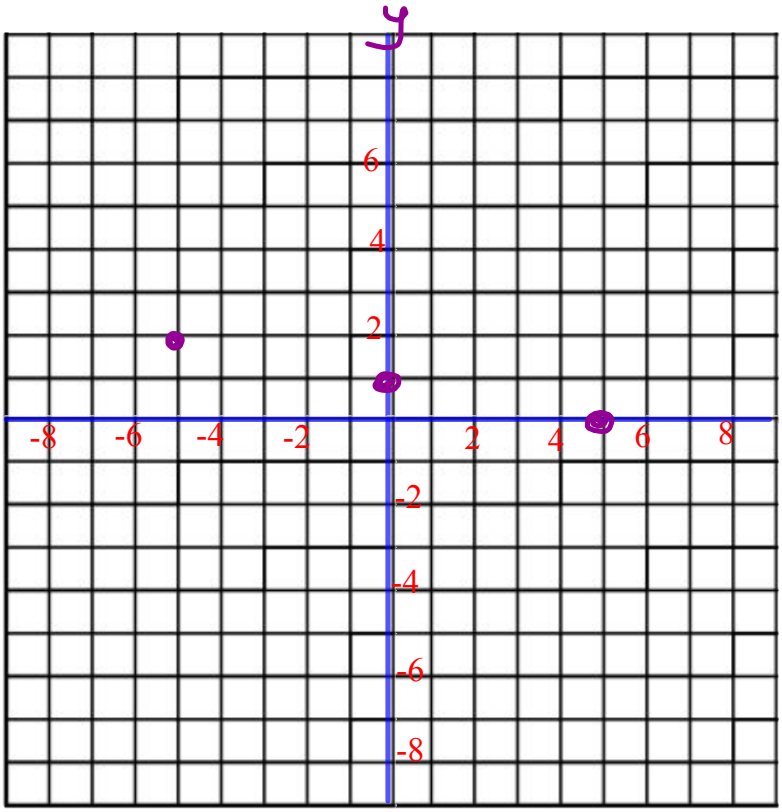
Warm-Up Grade 9

$y = \frac{\Delta y}{\Delta x} x \pm \#$

Make a table for 3 values of x.
Graph the equation.
(Pick nice numbers)

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

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



$\Delta x = 5 \quad \Delta y = -1$

x	y
-5	2
0	1
5	0

$y = \frac{-1}{5}(-5) + 1$

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

$y = 1 + 1$

$y = 2$

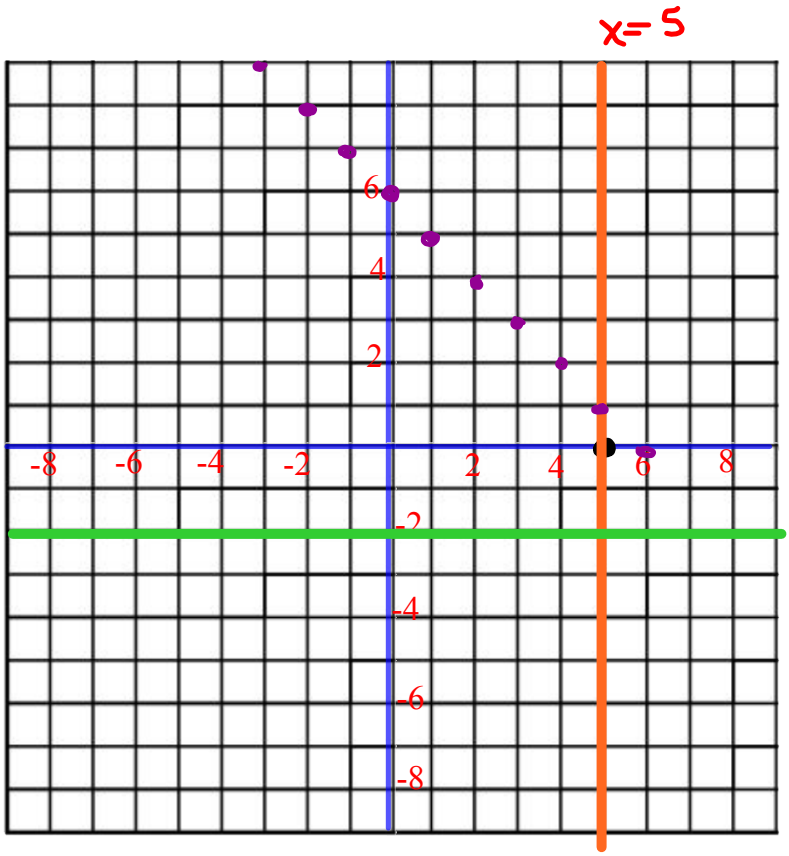
$y = \frac{-1}{5}(0) + 1$

$y = \frac{0}{5} + 1$

$y = 0 + 1$

$y = 1$

Graph the line



$x = 5$

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

$y = -2$

$x + y = 6$

$y = \frac{-1}{1}x + 6$

$\Delta x = 1$ $\quad y = -1$

x	y	
0	6	-1
1	5	-1
2	4	
3	3	

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

$$\frac{\Delta y}{\Delta x} = \frac{3}{1}$$

$x = 0$

$y = 3(0) - 4$

$y = 0 - 4$

$y = -4$

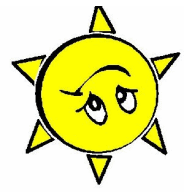
$(0, -4)$

slope

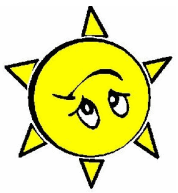
$$y = \frac{\Delta y}{\Delta x}x \pm \#$$

y-intercept

$(0, \#)$



Warm-Up Grade 9



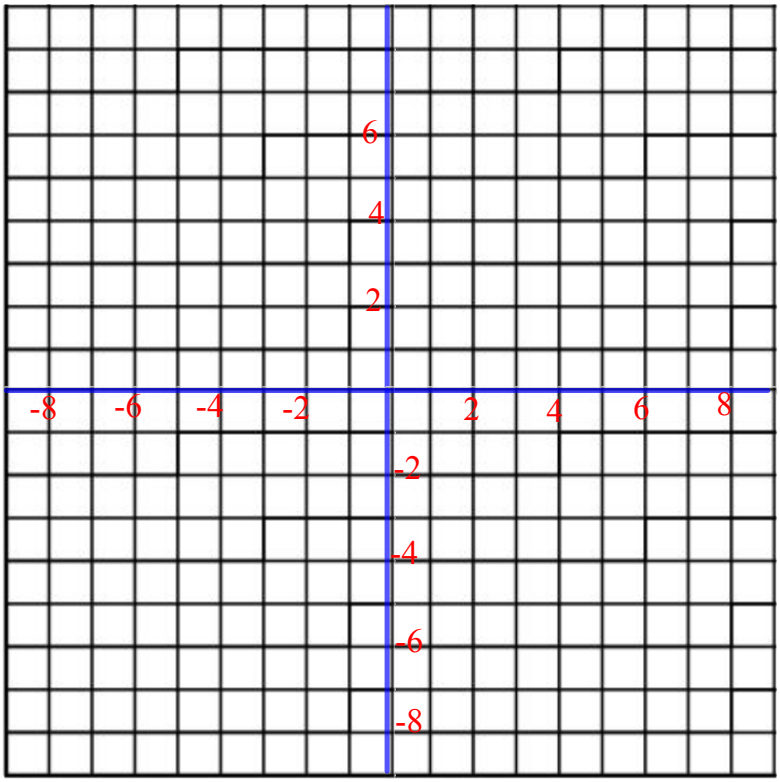
Using Slope and y-intercept

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

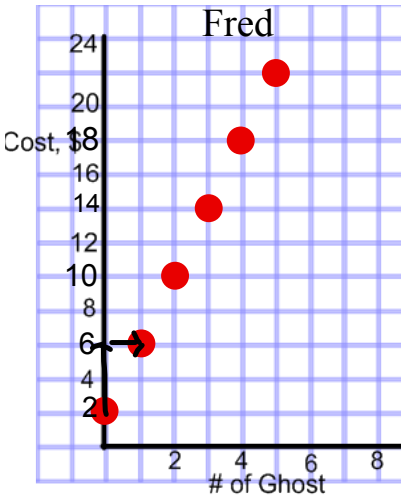
$y = \frac{-1}{5}x + 1$

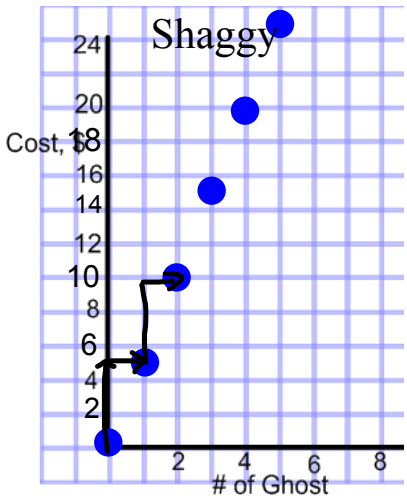
$\frac{\Delta y}{\Delta x} = \frac{-1}{5}$

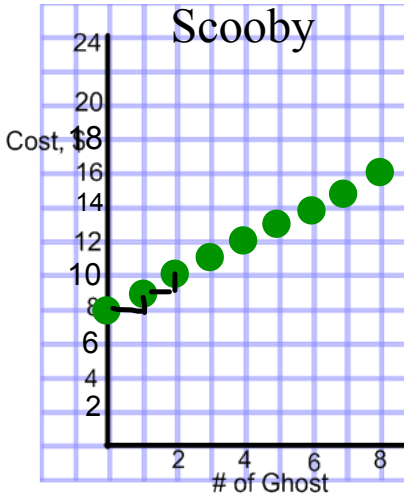
(0, 1)



Fred, Shaggy and Scooby are hired to find ghosts. Each ghost hunter charges a different rate. These graphs show how the cost is related to the number of ghosts caught.







Match each graph with its equation:

$y = \frac{\Delta y}{\Delta x} x \pm \#$

$C = 1g + 8$

$g = 0$

$C = 0 + 8$

$C = 8$

$(0, 8)$

$\frac{\Delta y}{\Delta x} = \frac{1}{1}$ ↑ →

Scooby

$C = 5g$

$g = 0$

$C = 5(0)$

$C = 0$

$(0, 0)$

$\frac{\Delta y}{\Delta x} = \frac{5}{1}$ ↑ →

Shaggy

$C = 4g + 2$

$g = 0$

$C = 4(0) + 2$

$C = 0 + 2$

$C = 2$

$(0, 2)$

$\frac{\Delta y}{\Delta x} = \frac{4}{1}$ ↑ →

Fred

The 3 graphs below have these equations, but the graphs are not in order:

$y = 2x + 4$

$x = 0$

$y = 2(0) + 4$

$y = 4$

(0, 4)

$\frac{\Delta y}{\Delta x} = \frac{2}{1}$ ↑ →

C

$x + y = 7$

$y = -x + 7$

$x = 0$

$y = -0 + 7$

$y = 7$

(0, 7)

$\frac{\Delta y}{\Delta x} = \frac{-1}{1}$ ↓ →

A

$y = 4x - 2$

$x = 0$

$y = 4(0) - 2$

$y = 0 - 2$

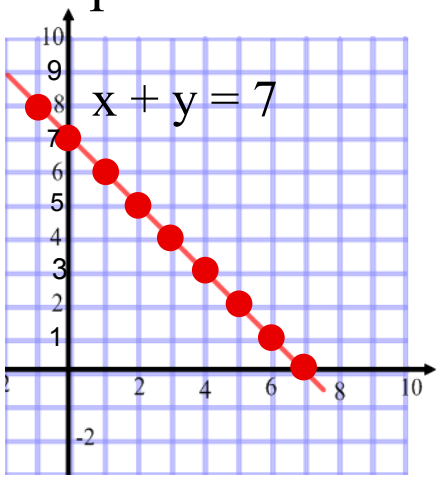
$y = -2$

(0, -2)

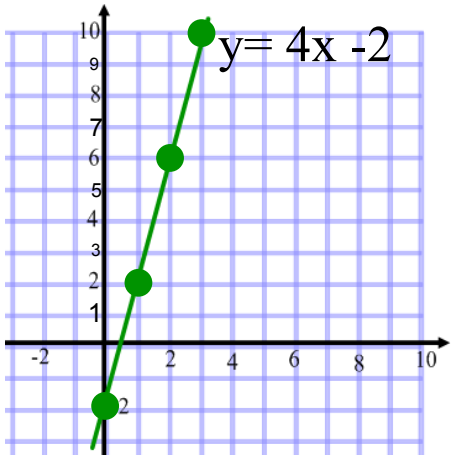
$\frac{\Delta y}{\Delta x} = \frac{4}{1}$ ↑ →

B

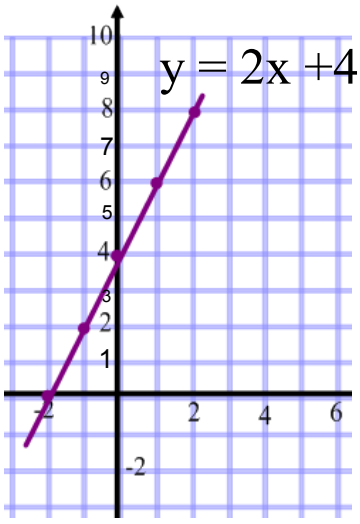
Graph A



Graph B



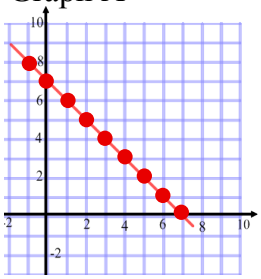
Graph C



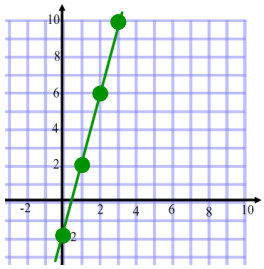
The 3 graphs below have these equations, but the graphs are not in order:

$y = 2x + 4$ $x + y = 7$ $y = 4x - 2$

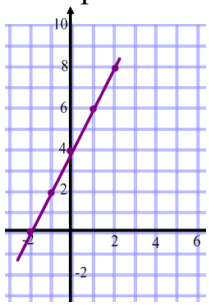
Graph A



Graph B



Graph C



Step 1) Use the three equations to determine the coordinates of the graphs.

Pick x=0, x=1, and x=2 and sub into each equation

$y = 2x + 4$	$x + y = 7$	$y = 4x - 2$
Substitute: x= 0		
one point:)	one point: ( )	one point: ( )
Substitute: x= 1	Substitute: x= 1	Substitute: x= 1
one point: ( )	one point: ( )	one point: ( )
Substitute: x= 2	Substitute: x= 2	Substitute: x= 2
one point: ( )	one point: ( )	one point: ( )

STEP 2) Match up the graph that has .

STEP 3) Match up the graph that has .

STEP 4) Match up the graph that has .

The 3 graphs below have these equations, but the graphs are not in order:

- $y = x + 4$

$\frac{\Delta y}{\Delta x} = \frac{1}{1}$ ↑ →

$x = 0$

$y = 0 + 4$

$y = 4$

$(0, 4)$

$x - y = 6$

$\frac{-y}{-1} = \frac{-x + 6}{-1} \quad \frac{}{-1}$

$y = x - 6$

$\frac{\Delta y}{\Delta x} = \frac{1}{1}$ ↑ →

$x = 0$

$y = 0 - 6$

$y = -6$

$(0, -6)$

$y = -3x + 4$

$\frac{\Delta y}{\Delta x} = \frac{-3}{1}$ ↓ →

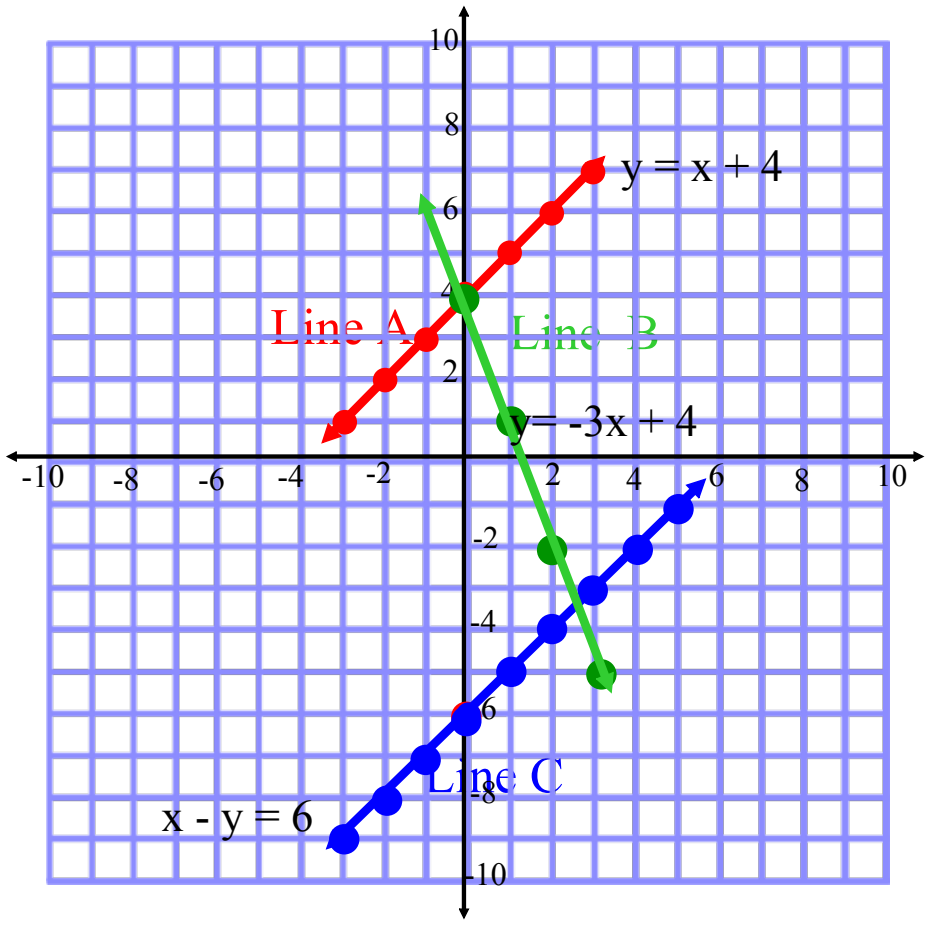
$x = 0$

$y = -3(0) + 4$

$y = 0 + 4$

$y = 4$

$(0, 4)$



If you always rearrange first

$Y = 3x + 7$

x	y
-1	4
0	7
1	10
2	13

The number in front of "x" in the equation represents the slope:
Slope: (how steep a line is)

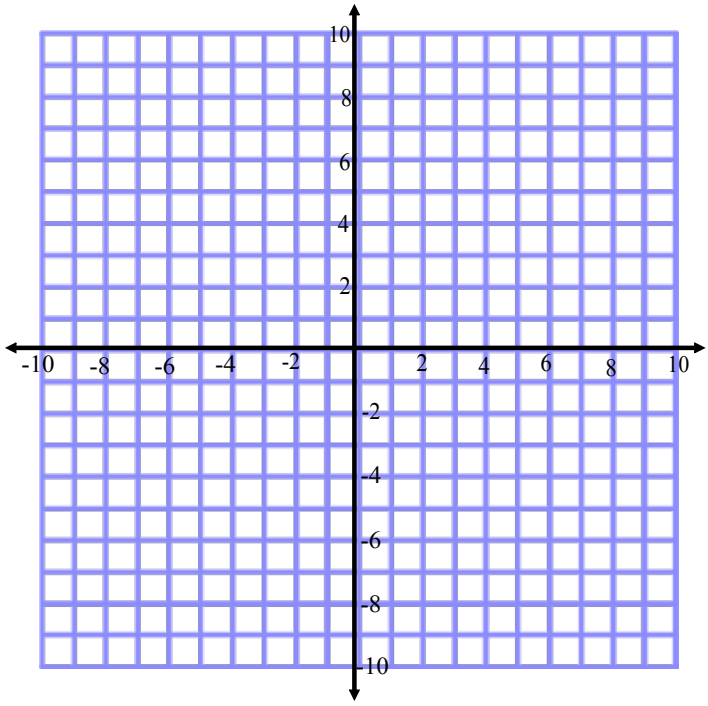
What we notice: when x increases by 1, y increases by 3

$$\text{Slope} = \frac{\text{change in y}}{\text{change in x}} \quad \text{or} \quad \frac{\text{change in RISE}}{\text{change in RUN}}$$

Thus

$$\text{Slope} = \frac{3}{1} = 3$$

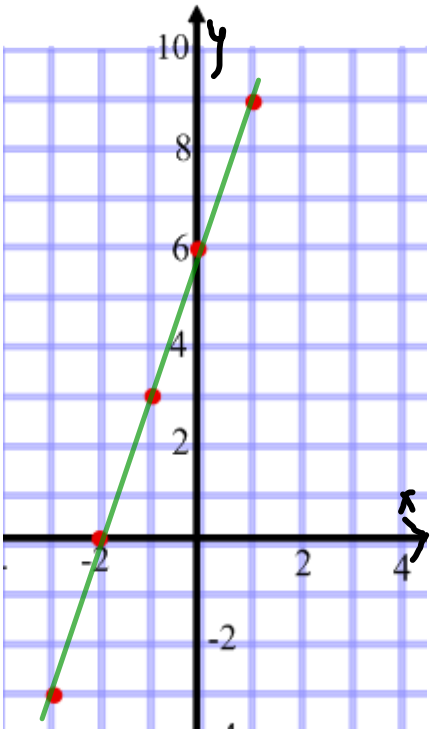
What does this graph look like?
click to see



Which equation represents the graph?

rise / run

1



pick an x value to sub in

Pick the correct equation

a) $y = -5x + 6$

$\frac{\Delta y}{\Delta x} = \frac{-5}{1}$ (0, 6)

b) $y = 3x + 6$

$\frac{\Delta y}{\Delta x} = \frac{3}{1}$ (0, 6)

c) $y = 2x - 5$

$\frac{\Delta y}{\Delta x} = \frac{2}{1}$ (0, -5)

Homework

page 188 - 190

#3 - #9