$Ax + By = C$

Linear Equations 11
Standard Form Graphing
PreAp Explore

Name _____
Date _____ 11/11 _____ Period __1__

1. Mount Washington in Pittsburgh, Pennsylvania gives you a spectacular view of the city. A trolley car takes tourists along the track up and down the mountain. The total distance of the trip is about 1600 feet. The distance can be graphed as a function of time. $f(t) = d$
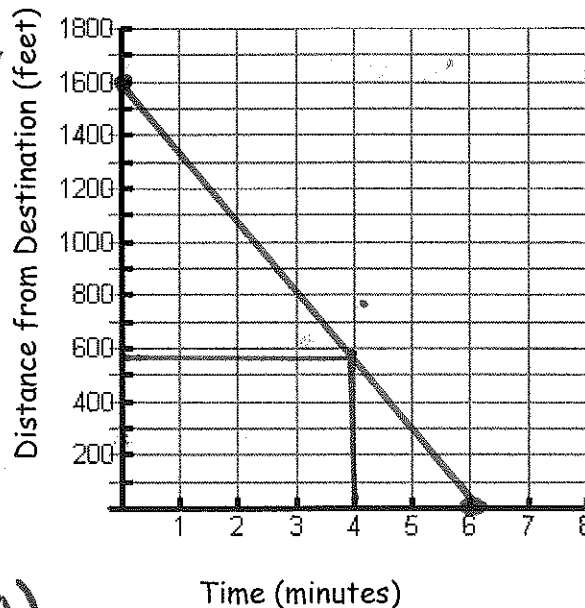
a. The y-intercept is (0, 1600) What does this mean for this situation?
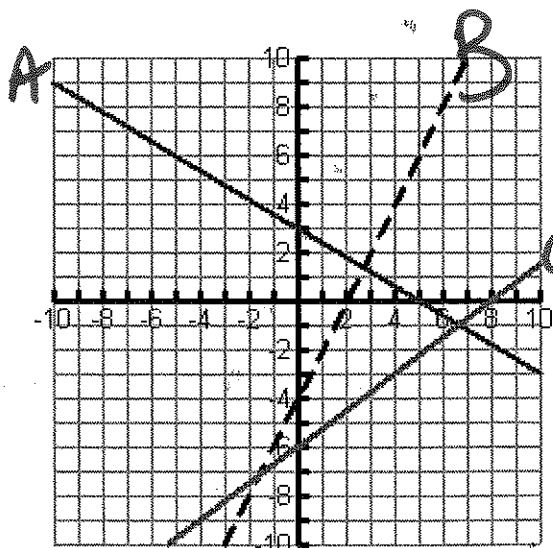
The trolley starts 1600 ft from its destination

b. The x-intercept is (6,0) What does this mean for this situation?

It takes 6 minutes for the trolley to reach its destination

c. Graph this relationship.

d. Estimate the distance the car will be away from its destination after 4 minutes. (520-580)

≈ 575 feet

Distance from Destination (feet) — axis labeled 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800

Time (minutes) — axis labeled 1 2 3 4 5 6 7 8

(Graph with lines A, B, C)

2. Write ordered pairs for the y-intercepts of all three lines.

(0,3) (0,-4) (0,-6)

What do you notice about all the ordered pairs on the y-axis?

The x-value has to be zero

3. Write ordered pairs for the x-intercepts of all three lines.

A(5,0) B(2,0) C(8,0)

What do you notice about all the ordered pairs on the x-axis?

The y-value has to be zero

① Cover up method or ② F
                                S
                                S
                                S

Linear Equations 11

4. Graphing from Standard Form using X and Y Intercepts

Equation F	$2x + 3y = 12$

S: $\frac{2x}{2} + \frac{3\cdot 0}{2} = \frac{12}{2}$
   $x = 6$

Find the x – intercept for the equation.   Answer (6, 0) $\frac{12}{2} = 6$

$y = 0$ Cover the y solve for x

Find the y – intercept for the equation.   Answer (0, 4)   S: $\frac{2\cdot 0 + 3y}{3} = \frac{12}{3}$

$x = 0$ Cover the x solve for y $y = 4$

Graph the equation
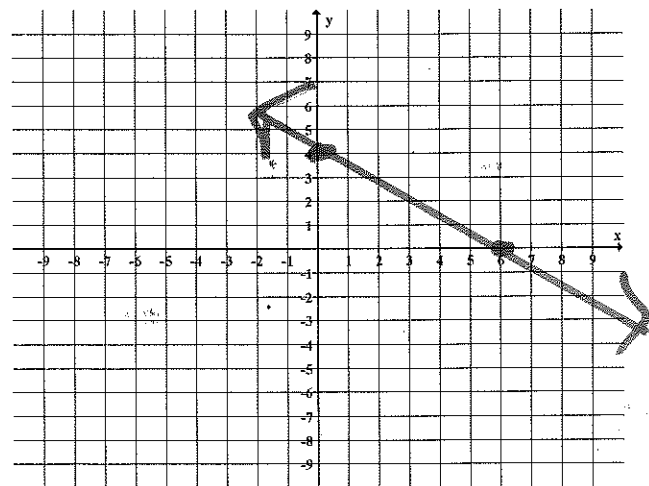
$\frac{\Delta y}{\Delta x}$ $\frac{-4}{6} = \frac{2}{3}$
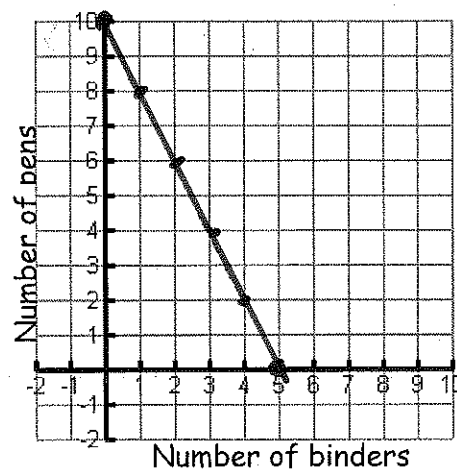

What is the m? $-\frac{2}{3}$

What is the b? 4

5. The school store sells binders for $4.00 each and pens for $2.00 each. The equation in standard form is $4x + 2y = 20$. It describes the number of binders x and pens y that you can buy for $20.

a. Complete the table to show the combinations of binders and pens that can be bought for $20.

b. Explain why it does not make sense to find the number of pens you can buy with 6 binders. Not possible as you would not have enough money

Binders (x)	Pens (y)
0	10
1	8
2	6
3	4
4	2
5	0
6	-2

Number of pens

Number of binders

c. Graph this relationship.

d. What is the ordered pair for the y-intercept? What does this point mean for the situation?
(0, 10) They can buy 10 pens if they buy zero binders

e. What is the ordered pair for the x-intercept? What does this point mean for the situation?
(5, 0) They can buy 5 binders but no pens.