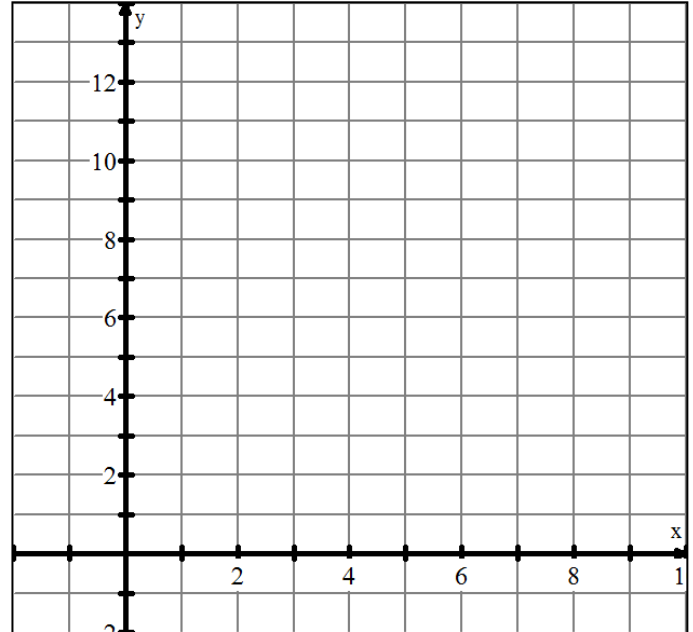
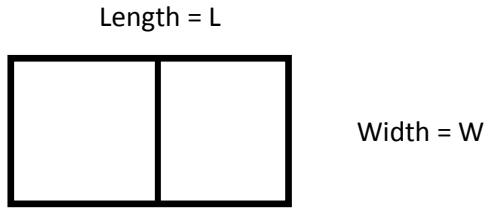


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(A) **Fast Five**

I am going to use a rectangular field to build 2 pens for my dogs. I have 24 meters of fencing and I want the field designed with a dividing fence down the middle to create two pens for my 2 dogs. The field is illustrated below:



- (a) Explain WHY the equation for the amount of fencing to be used is  $\rightarrow 24 = 2L + 3W$
  
- (b) Rearrange the equation for the amount of fencing so that L is isolated  $\rightarrow$  i.e.  $L = \text{????????}$

(c) Replace L with y (since this is the dependent variable) and replace W with x (since this is the independent variable)  $\rightarrow$  your equation should now be in the form  $y = mx + b$

(d) Graph the equation on the grid provided (using the table of values if you wish)

x					
y					

(e) List possible values for the length and width of the field that I am building.

Given the following equations, graph the equation by first isolating the y term:

(a)  $4x - 3y = 24$

(b)  $3x - 6y - 14 = 0$

(c)  $\frac{1}{2}x + y + 2 = 0$

(d)  $-5x + 2y - 15 = 0$

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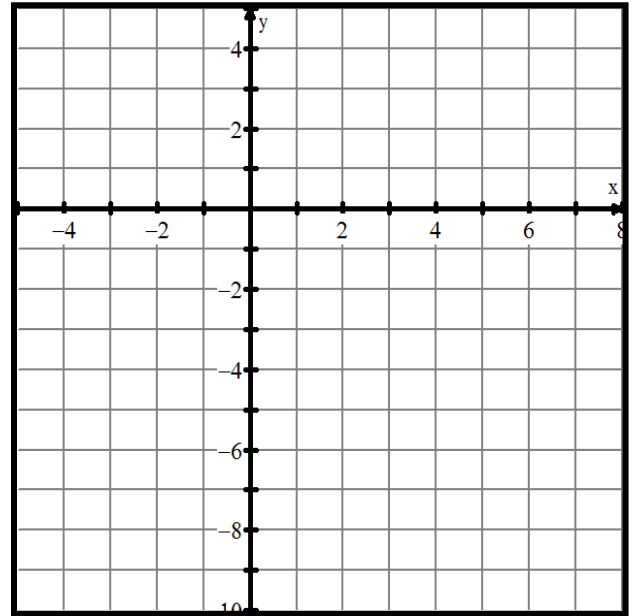
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(B) Explorations/Development

1. We will start with the linear equation  $2x - 4y - 12 = 0$ . This equation is written in STANDARD FORM.

- Rewrite the equation by isolating  $y$  → does this form of a linear equation look more familiar?
- Determine the slope of the line.
- Determine the  $y$ -intercept of the line.
- Graph the line on the grid provided
- Determine the  $x$ -intercept of the line.



2. Now, we will start with the equation  $6x - 2y - 18 = 0$ .

- Substitute  $x = 0$  and solve for  $y$ . What key point on the line have you just found?
- Substitute  $y = 0$  and solve for  $x$ . What key point on the line have you just found?
- Graph these key points and then the line.
- Determine the slope of the line.

3. Now start with an equation in slope/intercept form, say  $y = -\frac{2}{3}x + 4$ , and rearrange this equation into standard form,  $Ax + By + C = 0$ .

Date:

Title:

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4. Textbooks have an average mass of 0.9 kg while notebooks have an average mass of 0.6 kg. To avoid straining his back, Mr S never puts more than 6.0 kg of books in his backpack.
- Could I put 4 textbooks and 8 notebooks in my backpack?
  - Using the variables  $x$  and  $y$ , create an equation that models the relationship between the numbers of each type of book and the total maximum mass of books.
  - Change the equation to slope/intercept form.
  - Determine all possible combinations of textbooks and notebooks that would have a total mass of 6 kg.

**(C) Classwork**

From Nelson Text:

**(D) Homework/Resources**

- HOMEWORK:
- Help from AlgebraLab → [http://www.algebralab.org/studyaids/studyaids.aspx?file=algebra1\\_5-5.xml](http://www.algebralab.org/studyaids/studyaids.aspx?file=algebra1_5-5.xml)
- Video help → <http://www.brightstorm.com/math/algebra/linear-equations-and-their-graphs/standard-form-of-linear-equations>
- More video help → [http://www.youtube.com/watch?v=-8yM86\\_1fC4](http://www.youtube.com/watch?v=-8yM86_1fC4)