Lesson Title: L3 - Linear Equations in Standard Form Date:

(A) Lesson Objectives:

a. Review Linear Equations in the form of Ax + By = C
b. Apply Linear Equations to Real World Applications
c. Graph Linear Equations

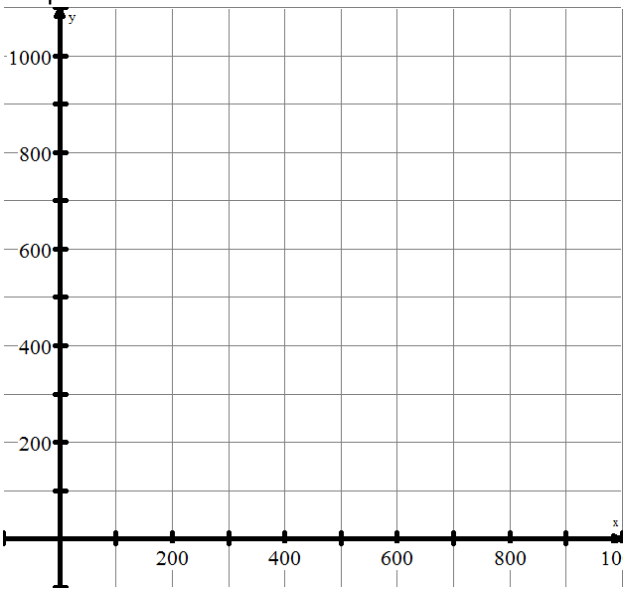
(B) Fast Five:

a. For the equation 12 = 2x – 3y:
   i. EXPLAIN how to graph the equation **C**
   ii. Complete a data table **K**
   iii. Determine the slope and the y-intercept **K**

(C) Explorations – Equations in Standard Form: - Salary and Earnings

Mr Santowski has a summer job working on an assembly line making motherboards for computers. He gets paid $1 for each for each laptop board he makes and $1.50 for each desktop board he makes. Last week, he earned $1015 for making 795 motherboards.

Graph:



DEFINE YOUR VARIABLES, then complete the tables

Data Table (motherboards):

x						
y						

Data Table (Earnings):

x						
y						

(a) Write an equation for the number of motherboards he makes.

(b) What do the x- and y-intercepts represent?

(c) Write an equation for his earnings.

(d) What do the x- and y-intercepts represent?

(e) Use algebra to write and solve a single equation that can be used to determine how many motherboards of each type Mr S made last week.

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(C) Explorations – Equations in Standard Form: - Salary and Earnings

Verbal Description:

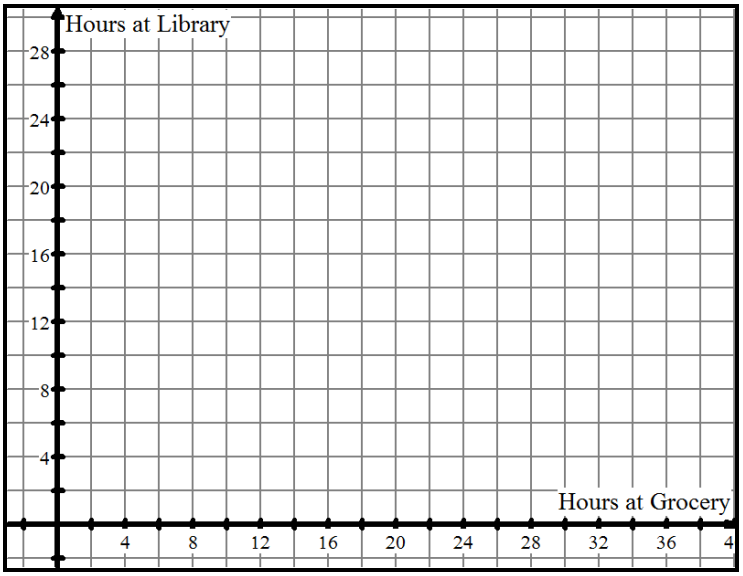
Sally has 2 part time jobs. At the grocery store, Sally earns $8/hr and at the library, she earns $10/hr. Before going on vacation, she would like to earn and save $280. Determine various combinations of hours worked that she needs to work to achieve this goal.

Let L represent the hours worked at the library
Let G represent the hours worked at the grocery

Data Table: List some possible combinations of hours worked at both location.

Hours at Grocery					
Hours at Library					

Graph:



Equation:

X-intercept:

Meaning of x-intercept:

Y-intercept:

Meaning of y-intercept :

Questions:

a. Write the equation in standard form.

b. Write the equation in slope-intercept form.

c. Which form do you find easiest for this problem? Why?

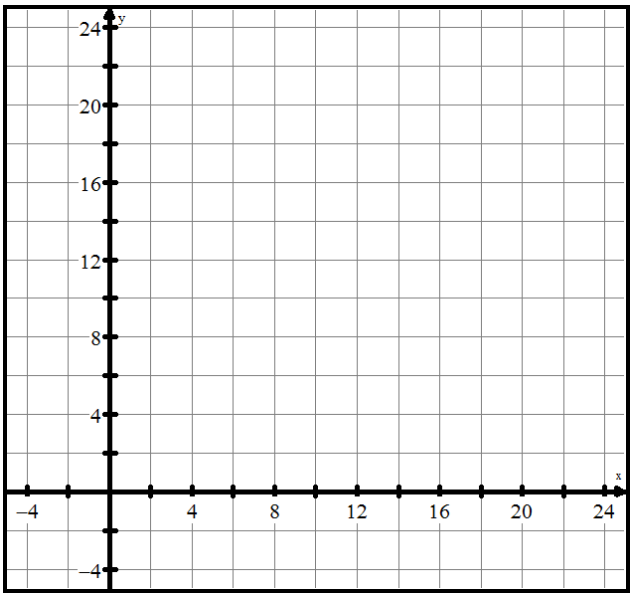
Lesson Title: L3 - Linear Equations in Standard Form Date:

(C) Explorations: Equations in Standard Form - Mixtures

(C) Explorations – Equations in Standard Form:

A candy store is preparing a mixture of chocolate raisins and chocolate peanuts. The raisins are sold for $2.25/kg and the peanuts are sold for $1.75/kg. They will produce a 20 kg mix that sells for $41.

Graph:



DEFINE YOUR VARIABLES, then complete the tables

Data Table (amount):

x						
y						

Data Table (Cost):

x						
y						

Questions:

(a) Write an equation for the amount of the mixture made.

(b) What do the x- and y-intercepts represent?

(c) Write an equation for the total cost of the mix.

(d) What do the x- and y-intercepts represent?

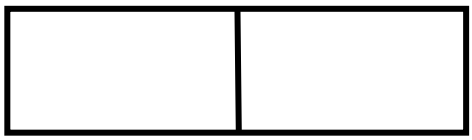
(e) Use algebra to write and solve a single equation that can be used to determine how much of each mixture should be used to make 20 kg of a mix that sells for $41.

Lesson Title: L3 - Linear Equations in Standard Form Date:

b. Geometry Problems ➔ Perimeter of a rectangle

Verbal Description:

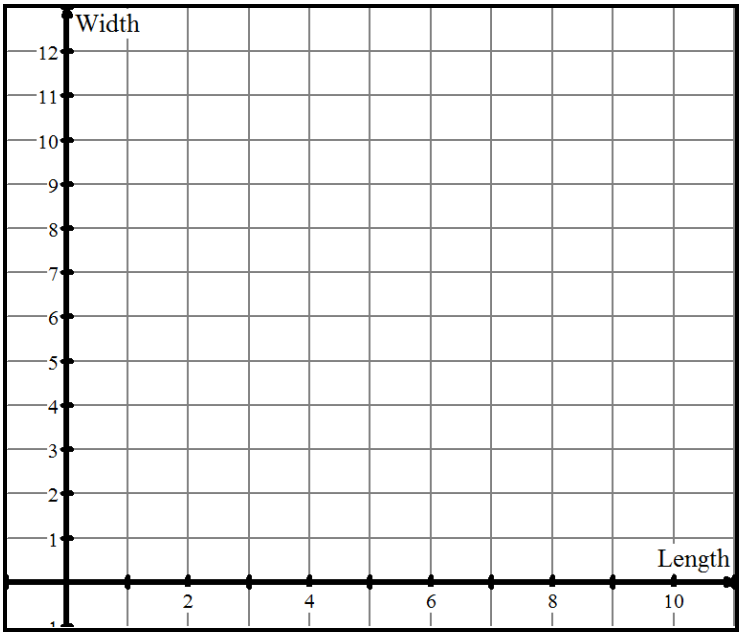
Mr Santowski is constructing 2 adjacent, rectangular pens to contain puppies. I have 24 meters of fencing material available.



Data Table: List some possible values for the length and width of the pens.

length					
Width					

Graph:



Equation:

X-intercept:

Meaning of x-intercept:

Y-intercept:

Meaning of y-intercept :

Questions:

a. Write the equation in standard form.

b. Write the equation in slope-intercept form.

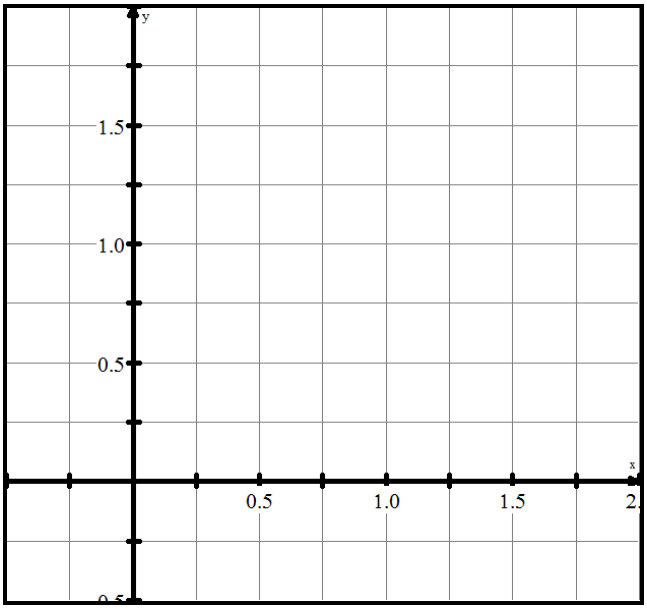
c. Which form do you find easiest for this problem? Why?

Lesson Title: L3 - Linear Equations in Standard Form Date:

(C) Explorations: Equations in Standard Form - Rates

Jose travelled 95 km from Oakville to Oshawa by car and by train. The car averaged a speed of 60 km/hr and the train averaged 90 km/hr. The whole trip took 1.5 hours of travel time.

Graph:



DEFINE YOUR VARIABLES, then complete the tables

Data Table (time):

x						
y						

Data Table (distance):

x						
y						

Questions:

(a) Write an equation for the time travelled.

(b) What do the x- and y-intercepts represent?

(c) Write an equation for the distance travelled.

(d) What do the x- and y-intercepts represent?

(e) Use algebra to write and solve a single equation that can be used to determine how much time was spent travelling by car.