

Find your new seat.

(we'll change again in a few weeks)

Pick up the

## WARM UP

A

Graph the line passing through the point  $(2, -3)$  with a slope of  $\frac{1}{2}$ .

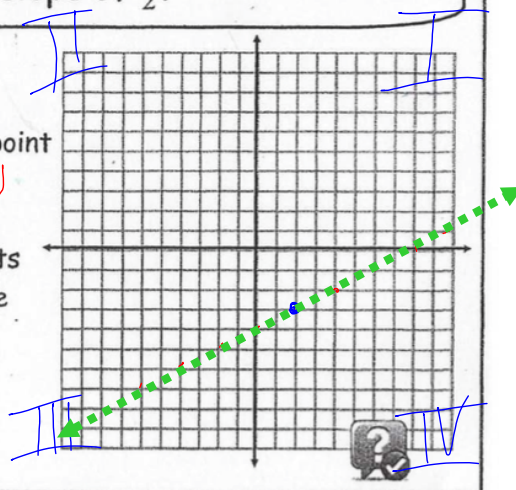
1. Graph the line.

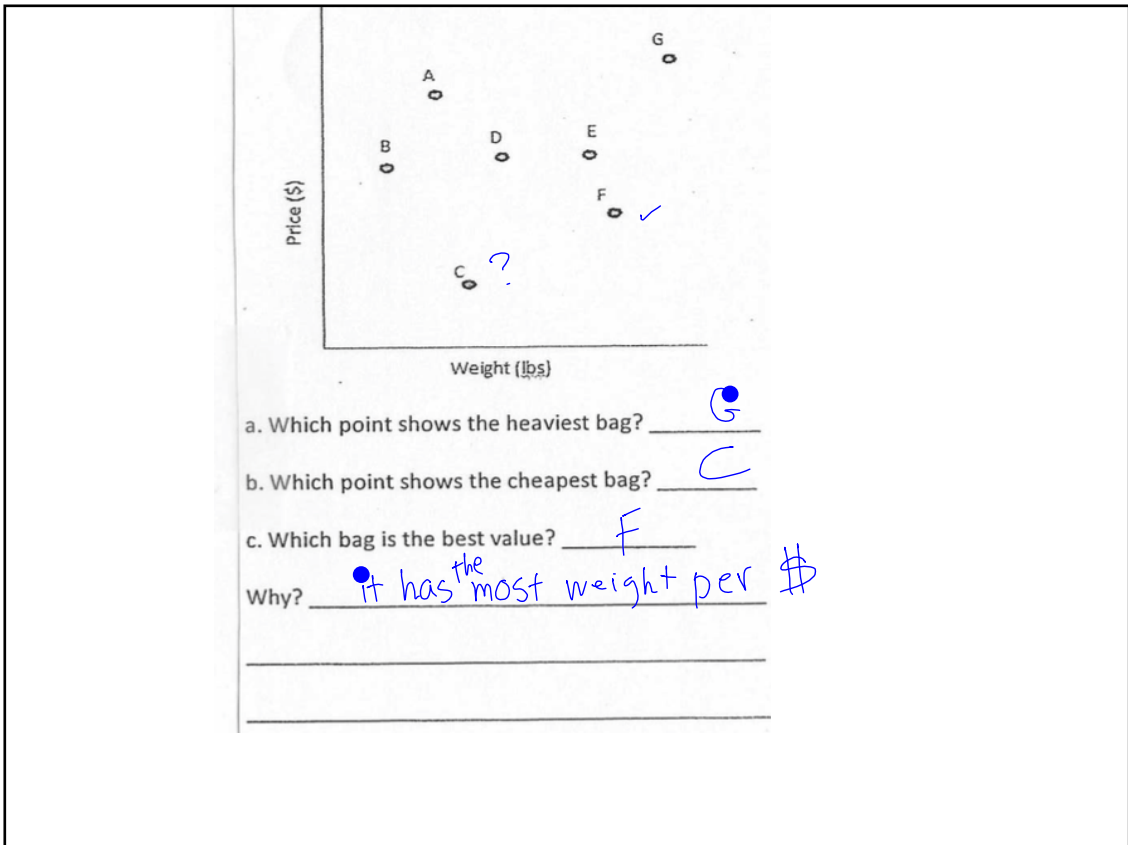
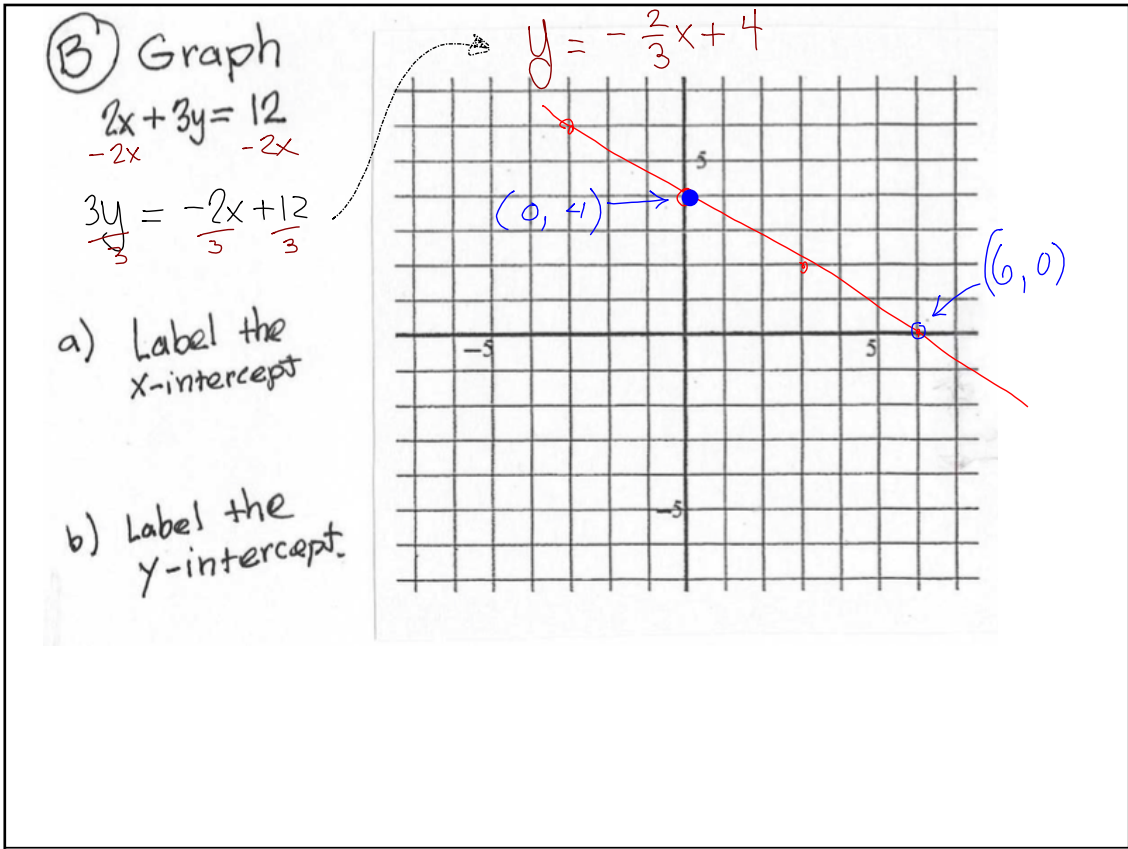
2. Identify another point on the line.

$(0, -4)$   $(4, -2)$

3. Name the quadrants through which the line passes.

I, III, IV





## Formula Re-arrangement Challenge

Rearrange the formula  $a = x + \frac{cx}{d}$  .to make  $x$  the subject.

$$a = x + \frac{cx}{d}$$

$$ad = dx + cx$$

$$dx + cx = ad$$

$$x(d + c) = ad$$

$$x = \frac{ad}{d + c}$$

$$(d)a = (d)x + \frac{d(c)x}{d}$$

$$a = x + \frac{c}{1}x$$

$$\frac{ad}{x} = \frac{dx}{x} + \frac{cx}{x}$$

$$\frac{ad}{x} = d + c$$

$$c = \frac{ad}{x} - d$$

(E) Solve  $73 = -2 + 3x^2$

$$\frac{75}{3} = \frac{3x^2}{3}$$

$$x^2 = 25$$

$$\sqrt{\quad} \quad \sqrt{\quad}$$

$$x = \pm 5$$

# Ch. 1

# Functions

Most tests from now on:

≡ individual

≡ weighted as 100 points

Aim

# "Use Function Language and Notation"

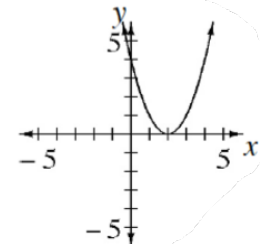
*We've already been reviewing*

*read page 6*

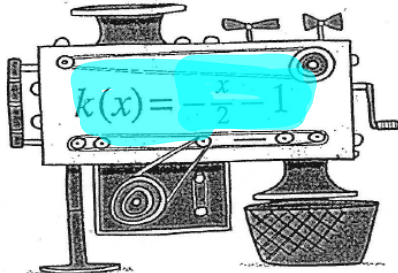
A relationship between inputs and outputs is a **function** if there is exactly one output for each input. Functions are often written as  $y =$  some expression involving  $x$ , where  $x$  is the input and  $y$  is the output. The following is an example of a function.

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

$x$	-2	-1	0	1	2	3	4	5
$y$	16	9	4	1	0	1	4	9



In the example above the value of  $y$  depends on  $x$ , so  $y$  is also called the **dependent variable** and  $x$  is called the **independent variable**.



a) calculate  $k(-6)$

$$k(-6) = -\frac{-6}{2} - 1$$

$$= 3 - 1 = 2$$

b) Find  $x$  if  $k(x) = 10$   
find  $x$  if the output is 10

$$10 = -\frac{x}{2} - 1$$

+1                      +1

$$11 = -\frac{x}{2}$$

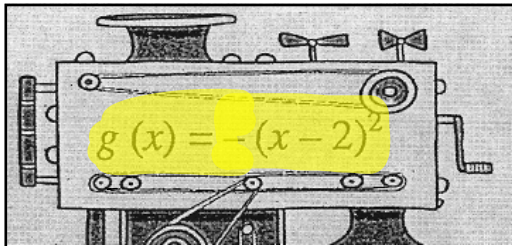
multiply by 2

$$2(11) = 2\left(-\frac{x}{2}\right)$$

$22 = -x$

$x = -22$

$f(-22) = 10$



(c) calculate  $g(3)$

$$g(3) = -(3-2)^2$$

$$= -1$$

(d) calculate  $g(-1)$

$$g(-1) = -(-1-2)^2$$

$$= -(-3)^2 = -9$$

(e) solve  $g(x) = -16$

$$-16 = -(x-2)^2$$

multiply by -1

$$16 = (x-2)^2$$

$$\sqrt{(x-2)^2} = \sqrt{16}$$

$$x-2 = \pm 4$$

$$x = 2 \pm 4$$

$$x = 2+4 \quad x = 2-4$$

$$x = 6 \quad x = -2$$

(f) solve  $g(x) = 100$

$$100 = -(x-2)^2$$

$$-100 = (x-2)^2$$

$$\sqrt{(x-2)^2} = \sqrt{-100}$$

NO ANSWER

Go back to the back side of the warm up

Angelica is working with function machines. She has the two machines  $g(x) = 2x^2 - 11$  and  $h(x) = \sqrt{x+5}$

She wants to put them in order so that the output of the first machine becomes the input of the second. She wants to use a beginning input of 4.

1. In what order must she put the machines to get a final output of 7?
2. Is it possible for her to get a final output of -3? If so, show how she could do that. If not, explain why not.

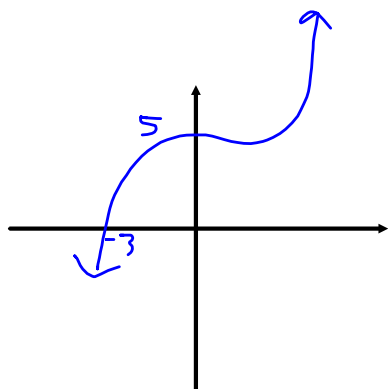


$$g(x) = \sqrt{x-5} \quad h(x) = x^2 - 6$$

**Algebra 2** is about studying many types of functions because there are so many different types of behavior in the world.

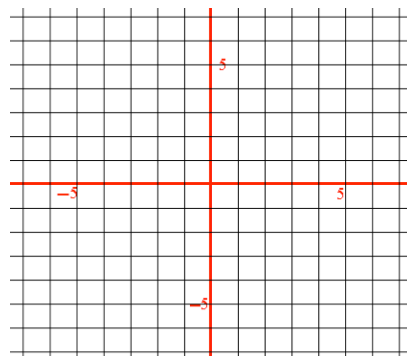
Occasionally you'll be asked to either sketch a picture or graph a function.

There is a big difference between a **sketch** and a **graph**



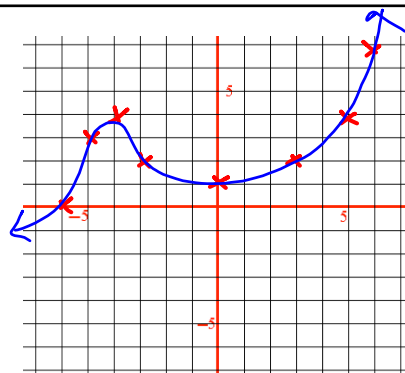
# Graphs

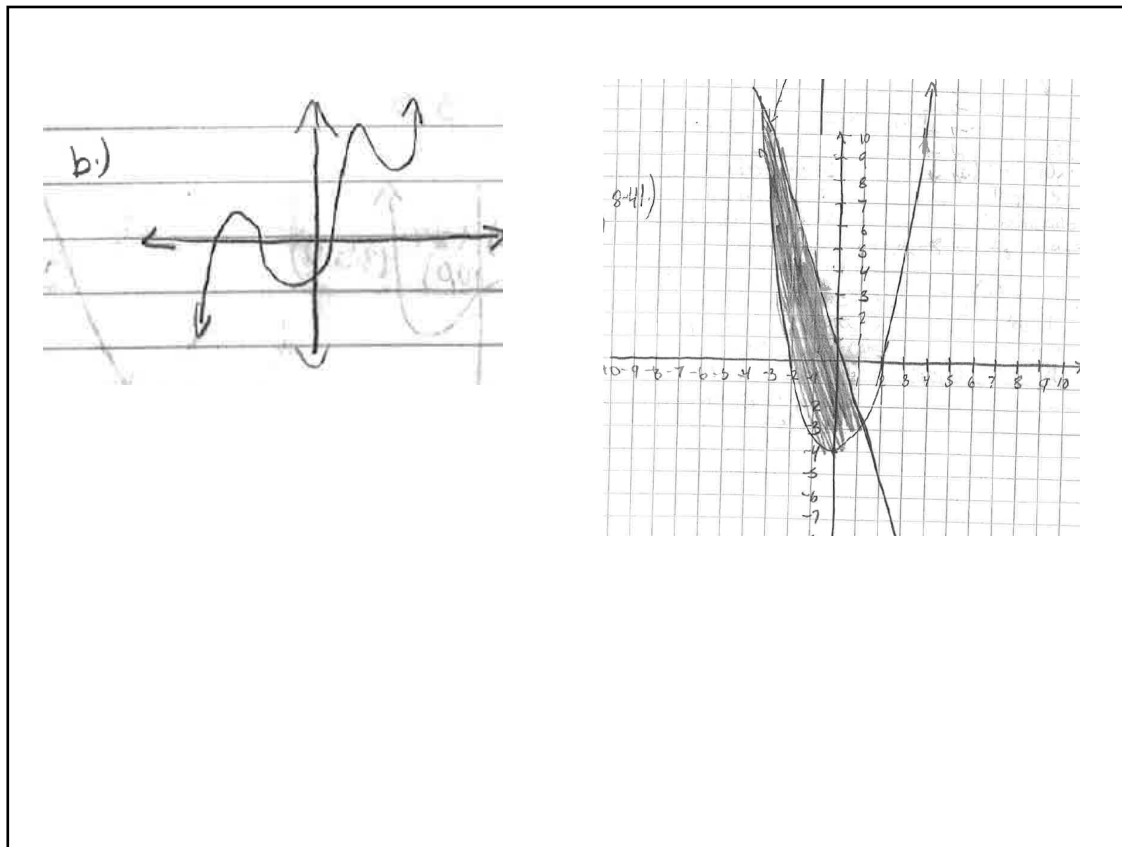
- Plot points accurately
- Graph Paper
- label key points
- go by "ones" if possible



don't waste time with "tic" marks

## Graphs





Use your GDC to help make both

Let's learn a few things about  
your GDC

functions must be in graphing form

or "y="

$$\sqrt{\frac{x}{2}} + y = 4$$

Pick up the 1/2 sheet

1. The carnival charges \$15 for admissions and \$2 per ride. ( $x$  = number of rides,  $y$  = cost)

Write an equation for the situation.

$$y = 2x + 15$$

Fill in the table.

$x$	$y$
10	35
20	55
30	75
40	95

$$y = \cancel{15x} + 2$$

# Assignment

## Work sheet **1.1.1**

pdf