October 12, 2017

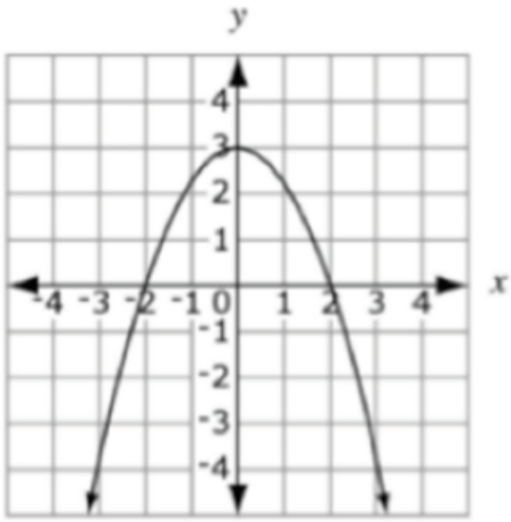
Warm Up

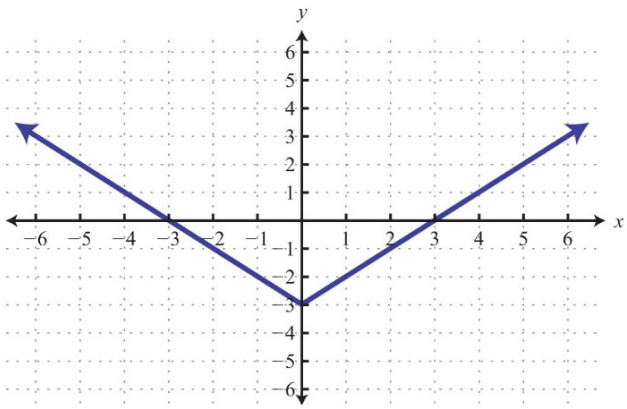
The function *j(x)* is shown at right.

a. What is the domain and range of *j(x)*?

b. What is the value of *j(2)?*

c. At what x values does *j(x)* = 2?





1. Identify the parent graph
2. list any movement
3. write the equation with "a" in it
4. pick a point on the graph and plug it in
5. solve for a
6. rewrite the equation with value of a

L.T. I can write the equation of function given the graph of that function

Now: you try writing the equations of the given graphs

Then: Make sure your group problems are in the back basket

Later: Double check that the shifts that are on the whiteboard are in your notes

October 13, 2017

$y = -\frac{1}{2}(x-1)^2 + 2$

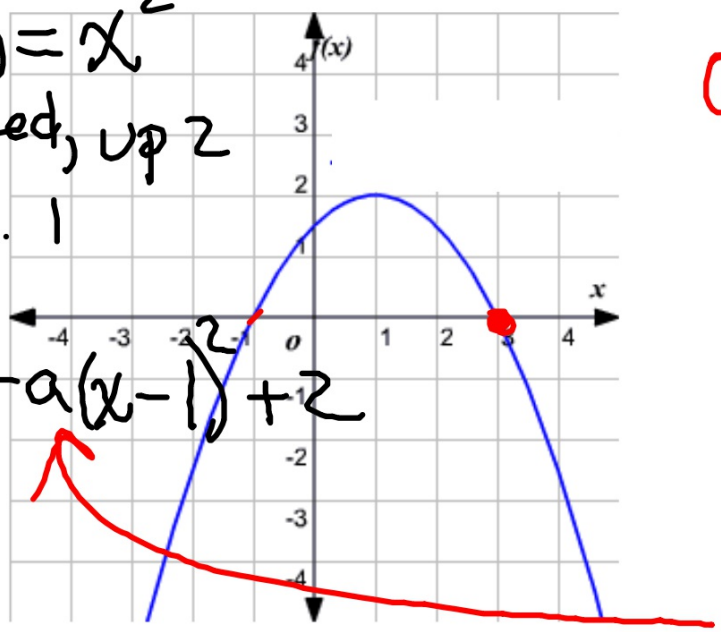
Warm Up

Write the equation of the graph below

$f(x) = x^2$

flipped, up 2

rt. 1



$y = -a(x-1)^2 + 2$

$0 = -a(-1-1)^2 + 2$

L.T. I can write the equation of function given the graph of that function

Double check your work from yesterday:

a. $f(x) = (x + 3)^2 - 1$

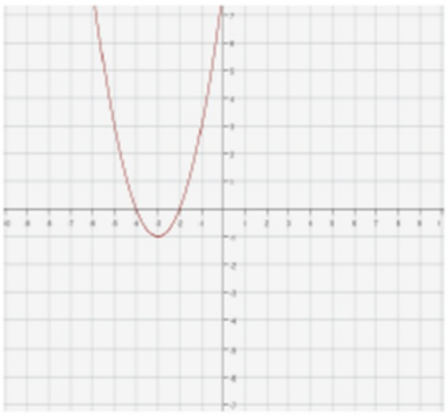
b. $f(x) = -1.5|x - 4| + 3$

c. $f(x) = -\sqrt{x} - 3$

d. $f(x) = (x + 5)^3 - 4$

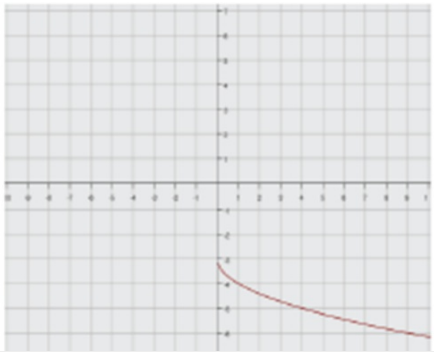
L.T. I can write the equation of function given the graph of that function

A.

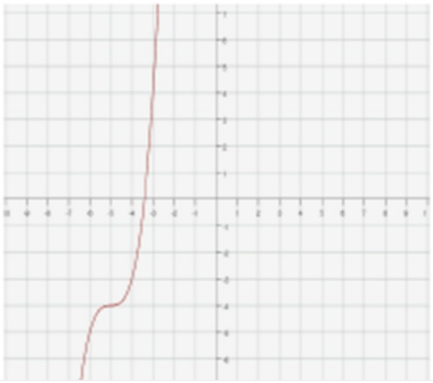


B.

C.



D.



L.T. I can write the equation of function given the graph of that function

Create a box

Each group will need: a piece of paper for each person, scissors, a chromebook, and rulers

1. measure out even corners
2. cut them out and fold your box
3. measure your height and calculate volume of the box ($V = lwh$)
4. input your findings on the Google sheet (use Chromebooks, link can be found on my website washburnmath.weebly.com under Advanced Algebra Notes)
5. In your notes, draw a graph of the points (don't forget to label your axis
6. Once you have your graph, make a guess as to what the equation of the graph is

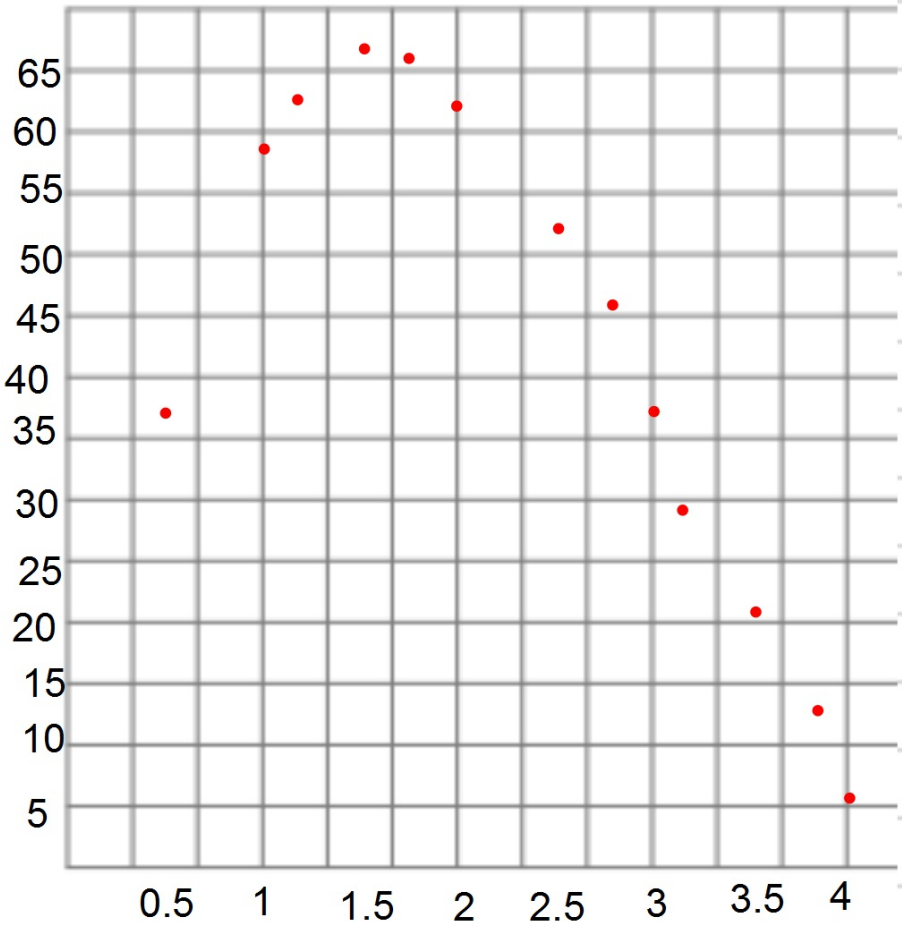
October 16, 2017

Do NOT Grab a warm-up sheet, let's talk about warm-ups instead ☺

Data from Friday:

Height	Volume
0.5	37.5
2.5	52.5
1	58.5
3.75	13.125
3	37.5
1.25	63.75
2	63
1.5	66
2.75	45.375
3.5	21
1.75	65.625
3.25	29.25

Start by graphing each data point



Height	Vol
0.5	3
2.5	5
1	5
3.75	13.
3	3
1.25	63
2	6
1.5	6
2.75	45.
3.5	2
1.75	65.
3.25	29

How can we write volume in terms of the height??

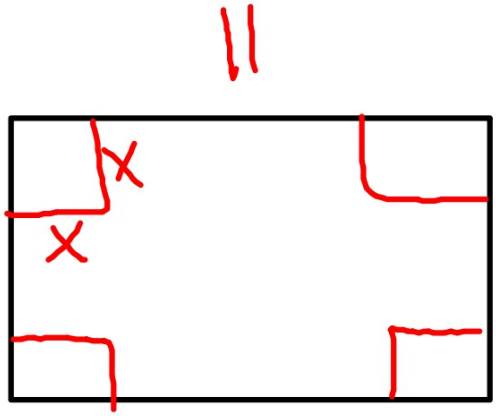
let height = x

$V = l \cdot w \cdot h$

$l = 11 - 2x$

$w = 8.5 - 2x$

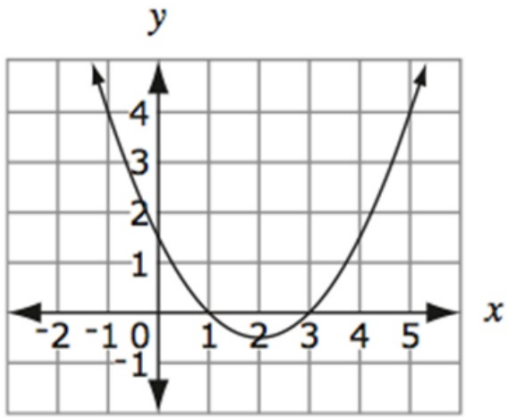
$V = x(11-2x)(8.5-2x)$



What are "real world" limits on x? How can we figure out the maximum volume of the box?

$$f(x) = x(8.5 - 2x)(11 - 2x)$$

Fill in the appropriate information using the The graph shown on the right.



y-intercept	*x-intercept(s)*	*Maximum or minimum value*	*Domain:*	*Range:*
For what *x*-values is *f(x)* increasing?		For what *x*-values is *f(x)* decreasing?		

Sketch a graph of: $y = \frac{1}{x+2} + 1$