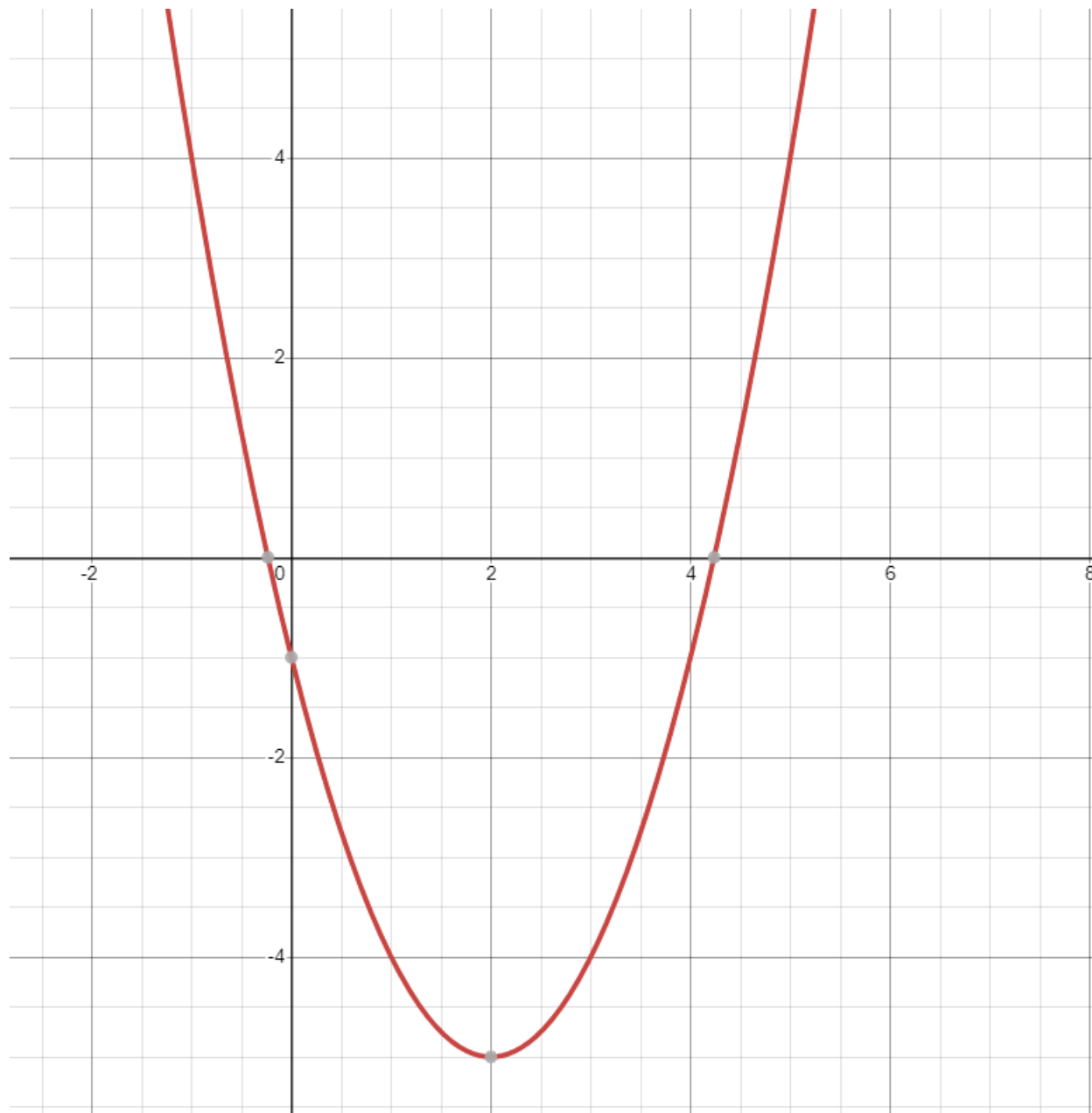Write the equation of the following functions. Notice they are all in vertex form. Also the leading coefficient is 1. So these should be extremely easy to write.
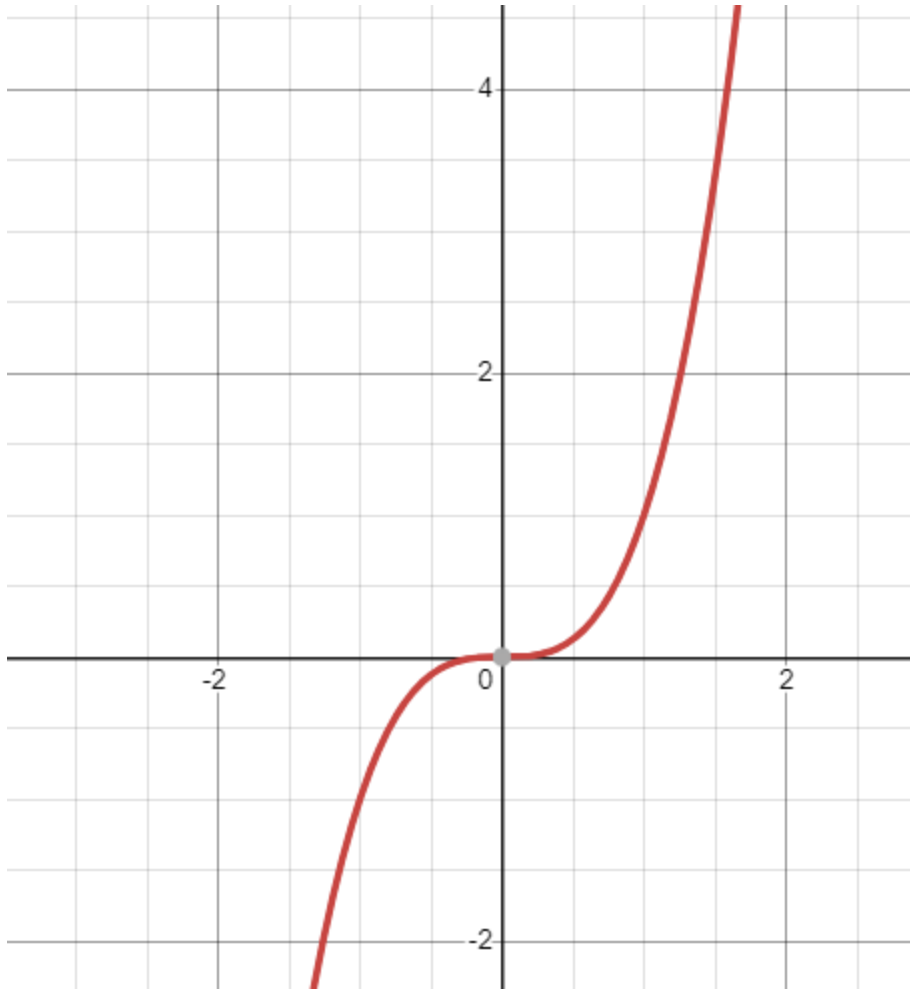

Equation

Domain

Range

When is f(x) increasing?
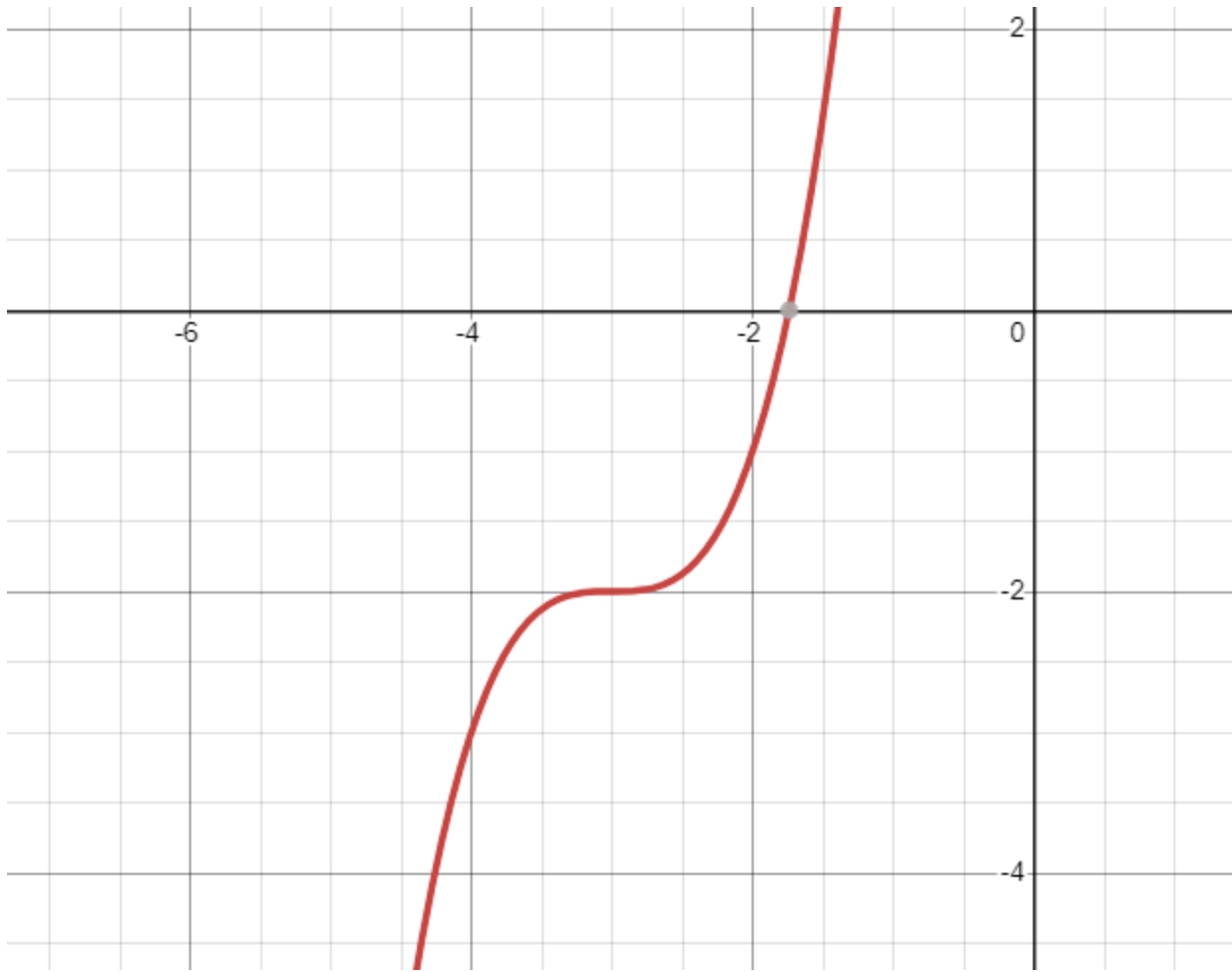
Equation

Domain

Range

What is true about the rate of change when 0<x<40?
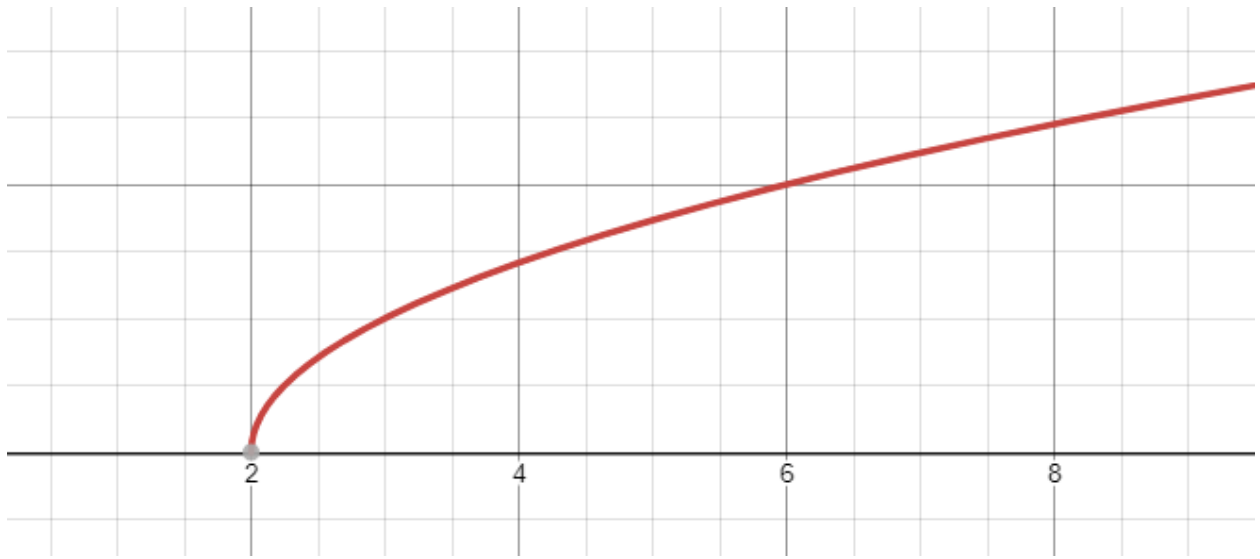
Equation

Domain
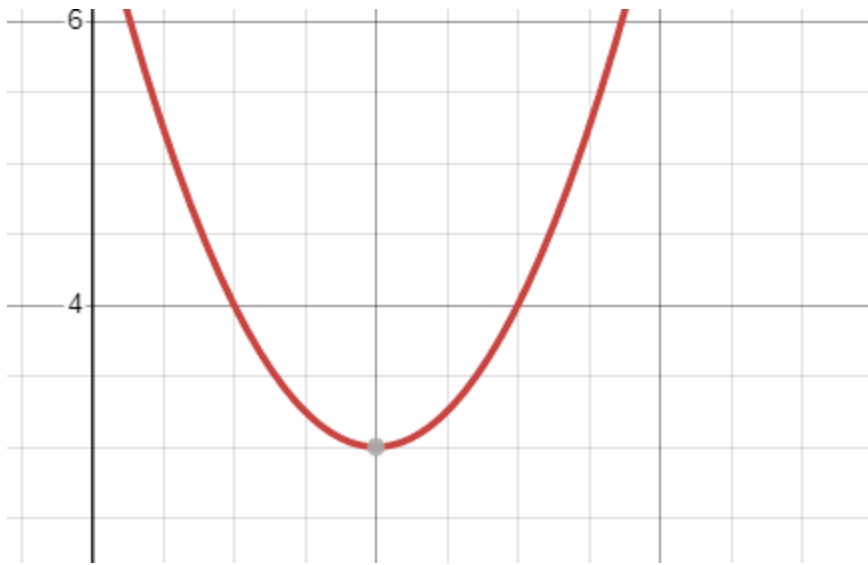
Range

What is true about the rate of change from -25<x<-3
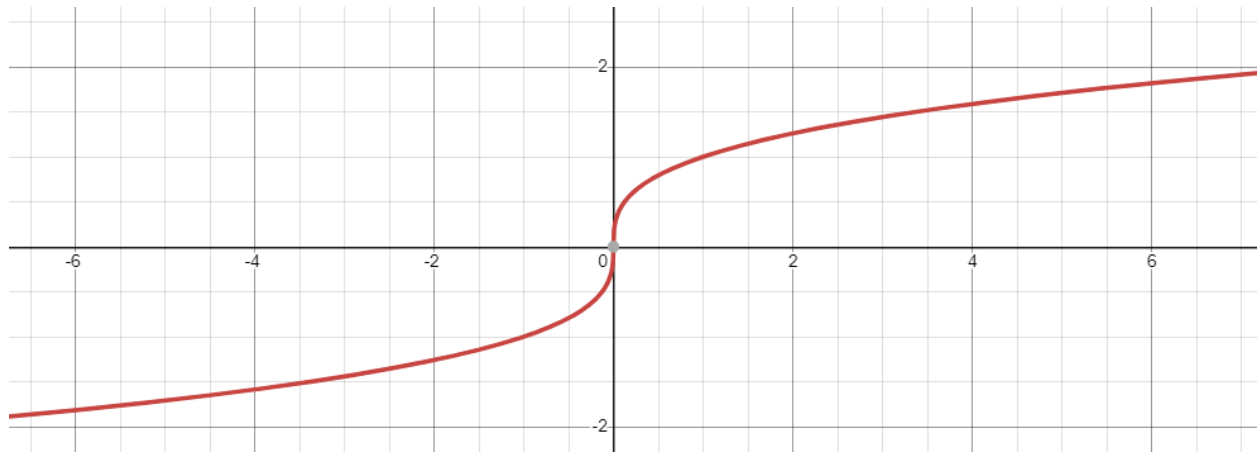
Equation

Domain

Range

What is true about the rate of change when
2<x<12

<table>
<tr><td>Equation</td></tr>
</table>

Domain:

Range:

Equation

Domain

Range:

7) A person collected data on the time it took to do a task. What family of functions does this most closely model. **A good strategy would be to roughly graph the points and see what it is looking like.**

x	y
-2	-7
-1	-1
0	0
1	1
2	7
3	25

What family of functions does it model?

8) Another person gathered data on the time it took to do a task. This is the table that they found:

x	y
0	0
1	1
2	1.3
3	1.65
4	1.89

Family of functions that this most closely resembles.

9) Given f(x) = 2x-4   and g(x)= x^2

What is f(g(x))   and What is g(f(x))?

Final answer for f(g(x))

Final answer for g(f(x))

10) You have a 12 by 18 inch piece of paper. You will be constructing an open top box.

1) What is the equation for this scenario?

2) What family of functions does this belong to?

3) What are the x intercepts for this function?

4) Sketch the graph

5) What is the real life domain for this problem?

6) What is the maximum volume?

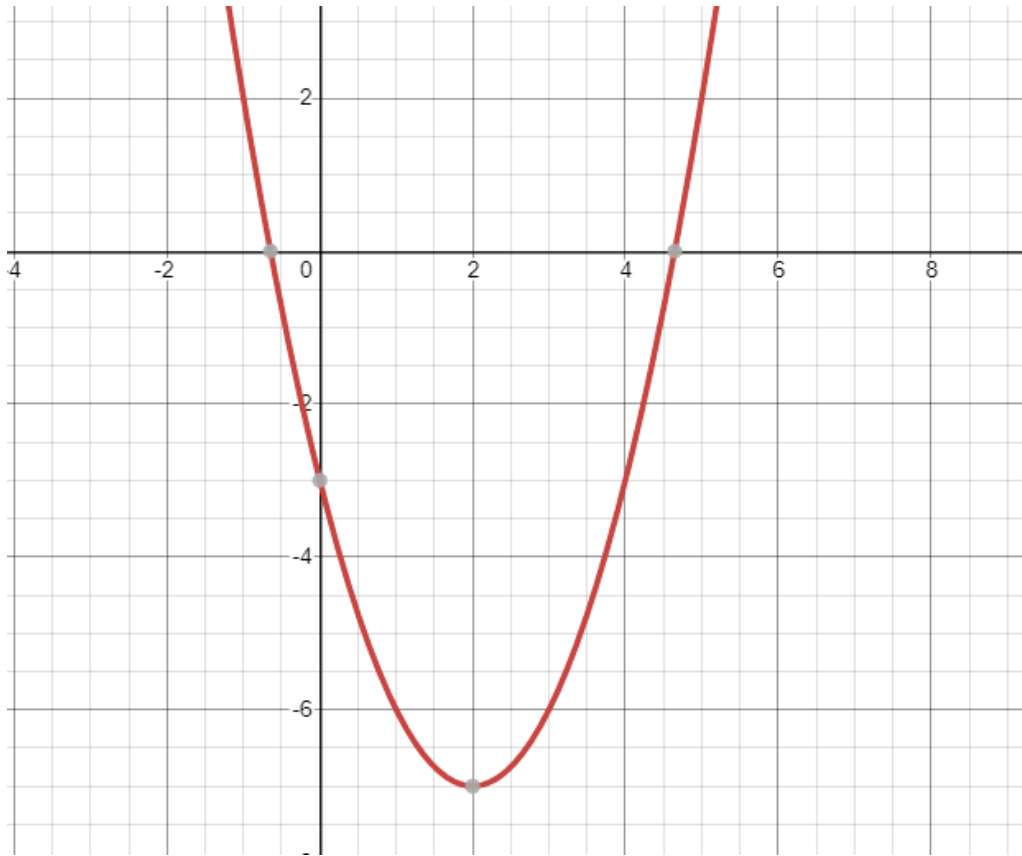7) What are the dimensions of the box that create the most volume?

11) If $f(x) = -3x^2-8$, then what is $f(-12)$?

12) If $f(x) = -3x^2-8$, then what is x when $f(x)= -56$?

13) Describe what happens to f(x) if the transformation is **y=f(x+7)+3**

14) Describe the transformation to y= $2|x-3|$ +6

15)

y- intercept	X intercepts	Max or min where?	Domain	Range
For what x values is f(x) increasing?		For what x values is f(x) decreasing?		