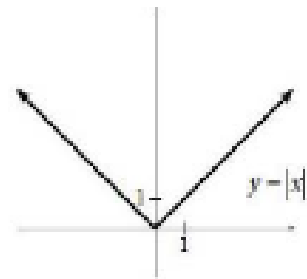
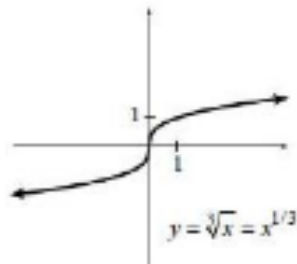
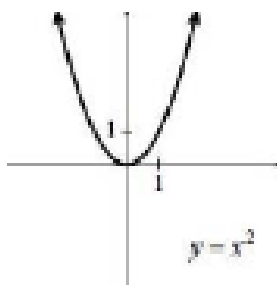


Chapter 1 Functions Test Review

Select all of the following graphs which represent  $y$  as a function of  $x$ .



Which tables show  $y$  as a function of  $x$ ?

Table 1 \_\_\_\_\_

Table 2 \_\_\_\_\_

Table 3 \_\_\_\_\_

Table 4 \_\_\_\_\_

$x$	$f(x)$	$x$	$f(x)$	$x$	$f(x)$	$x$	$f(x)$
-4	-10	-4	16	-4	-8	-4	-1
-2	-8	-2	4	-2	-4	-2	1
0	-6	0	0	0	0	0	3
2	-4	2	4	2	4	2	5
4	-2	4	16	4	8	4	7
<b>Table 1</b>		<b>Table 2</b>		<b>Table 3</b>		<b>Table 4</b>	

Describe what defining a function as 1 to 1 means:

---



---



---

$$f(x) = 5x^4 + x^2$$

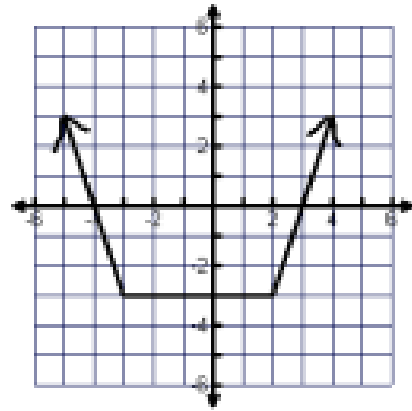
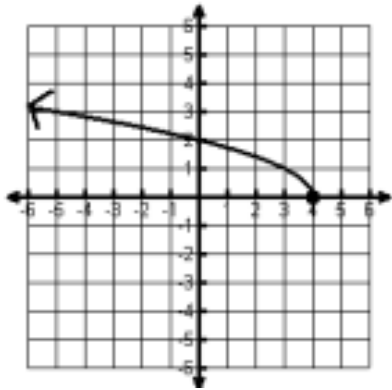
$f(4)$

$f(-3)$

$f(2)$

$f(-1)$

Write the domain and range of the function using interval notation.



Find the domain of each function

$$f(x) = \frac{2}{x+4}$$

$$f(x) = \frac{2x}{3x-1}$$

$$f(x) = \sqrt{2x-8}$$

$$f(x) = \frac{\sqrt{x-2}}{5-x}$$

Find the average rate of change of each function on the interval specified.

$$f(x) = 2x^2 + 1 \text{ on the interval } [3,6]$$

$$f(x) = \sqrt{x+4} \text{ on the interval } [12,21]$$

Given  $f(x) = 2x - 5$  and  $g(x) = x + 2$ , find  $(f \circ g)(x)$

Given  $f(x) = x - 1$  and  $g(x) = x^2 + 2x - 8$ , find  $(g \circ f)(x)$

Write a formula for  $f(x) = x^2$  shifted down 3 units and to the left 2 units and stretched by a factor of 3

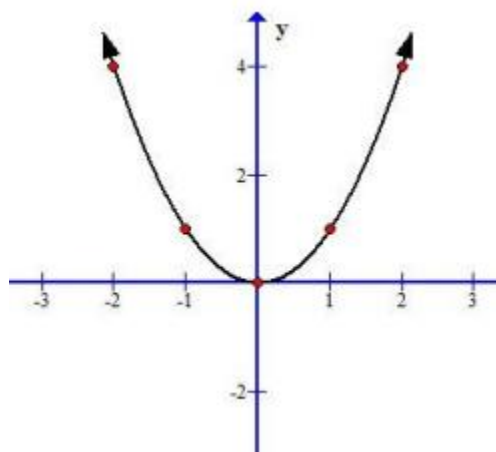
Describe how each formula is a transformation of a toolkit function.

$$f(x) = 4(x+1)^2 - 5$$

$$p(x) = \left(\frac{1}{3}x\right)^2 - 3$$

Using the graph of  $f(x)$  shown

- Find  $f(0) =$
- Solve  $f(x) = 4$
- State the interval on which the function is decreasing
- State the interval on which the function is increasing



a.	b.	c.	d.
----	----	----	----

For each function below, find  $f^{-1}(x)$

$f(x) = (x - 2)^5 + 3$	$g(x) = \frac{8 - 5x}{4}$
------------------------	---------------------------

Given:  $f(x) = 2x + 5$  ;  $g(x) = x^2 - 2$  ;  $h(x) = \frac{1}{2}x + 6$

$(f + g)(x)$	$(f * h)(x)$	$\frac{f}{g}(x)$
--------------	--------------	------------------