2.5

Transformations of Functions with Tables

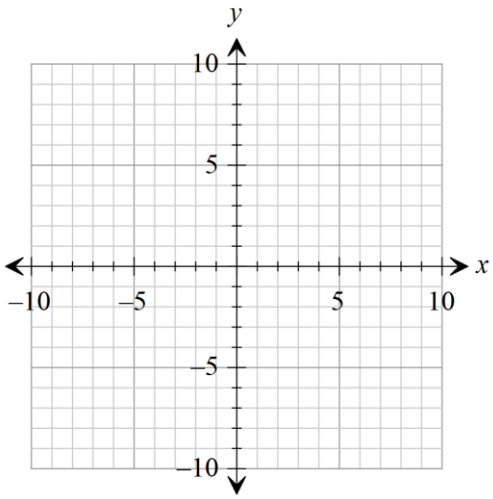
2023-2024

SCORE: /

Name _____ Date _____ Period _____

1. Graph the function, $f(x) = |x|$ below. Make sure your graph has at least 5 points clearly marked.

x	*f(x)*



Sketch each of the following functions without using a graphing calculator. Then find the listed key features for each function.

2. $f(x) = -|x+2|-3$

Parent

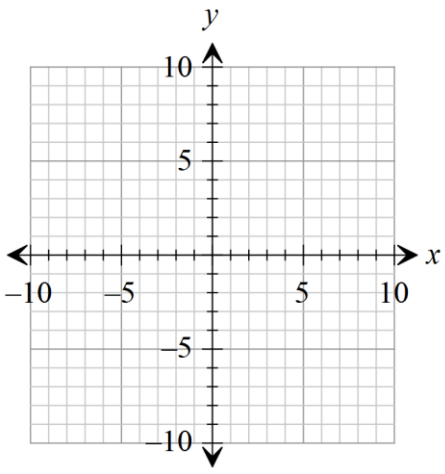
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Increasing Interval: **Decreasing Interval:** **Domain:** **Range:**

3. $f(x) = |-2x| - 3$

Parent

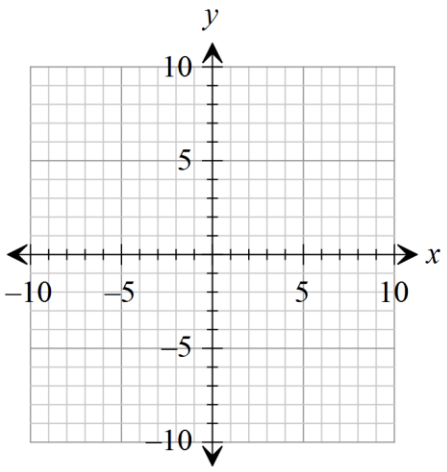
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Circle: Maximum or Minimum **Max/Min Point:** **Domain:** **Range:**

4. $f(x) = -|2(x+3)| - 3$

Parent

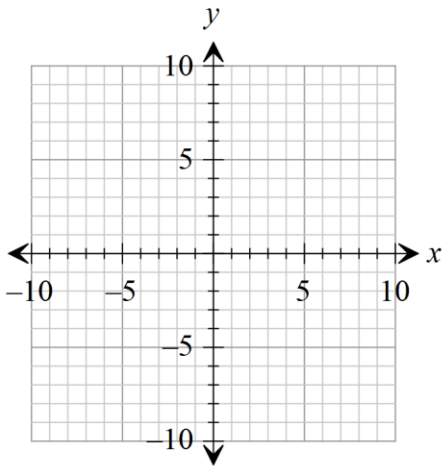
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Is the function positive or negative on the entire domain? **Domain:** **Range:**

5. $f(x) = \frac{1}{2}|x-5|$

Parent

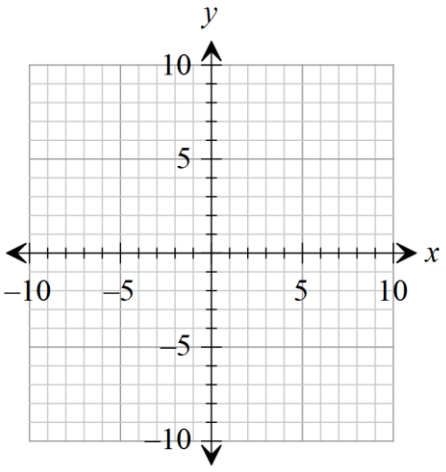
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



What is the positive interval? **Domain:** **Range:**

6. $f(x) = x^2 - 3$

Parent

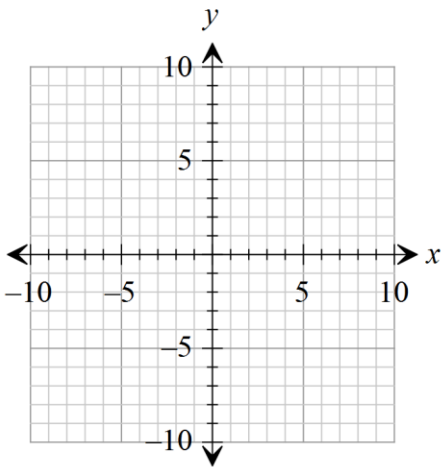
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Increasing Interval: **Decreasing Interval:** **Domain:** **Range:**

7. $f(x) = (x-5)^3 + 2$

Parent

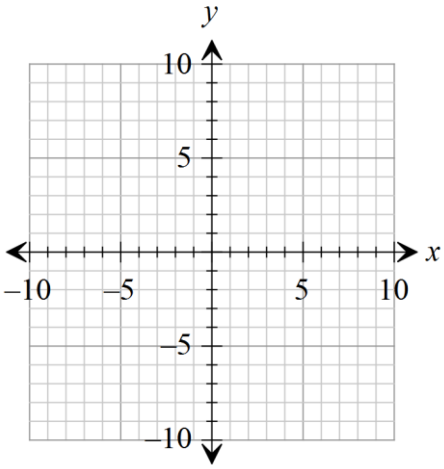
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Is the graph negative on the entire domain? **Domain:** **Range:**

8. $f(x) = 2\sqrt[3]{x}$

Parent

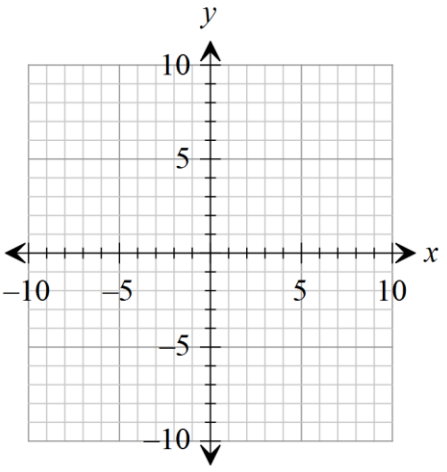
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



What are the x −intercepts? **What are the y −intercepts?** **Domain:** **Range:**

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

Parent

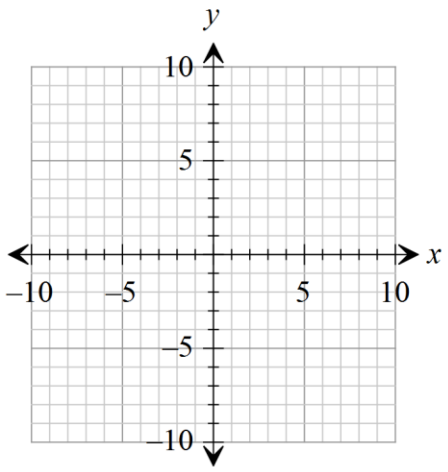
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



What are the x −intercepts? **What are the y −intercepts?** **Domain:** **Range:**

10. $f(x) = \sqrt[3]{x-7} + 2$

Parent

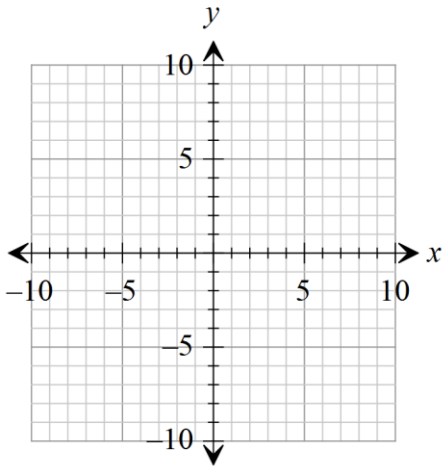
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Is the graph increasing on the entire domain? **Domain:** **Range:**

11. $f(x) = 3(x-2)^2 - 6$

Parent

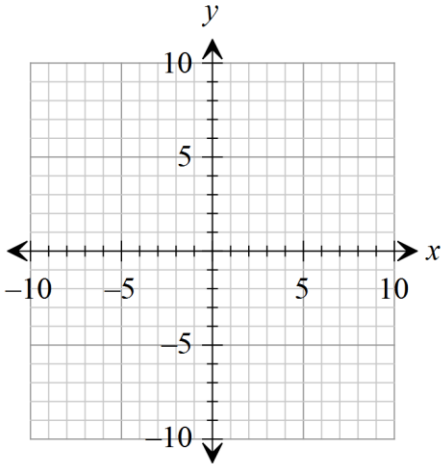
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Is the graph positive on the entire domain? **Domain:** **Range:**

12. $f(x) = -\sqrt{-(x+2)} + 4$

Parent

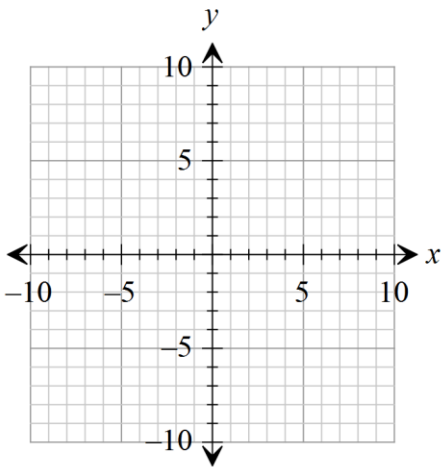
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Is the graph positive on the entire domain? **Domain:** **Range:**

13. $f(x) = \frac{1}{3}(x-1)^3$

Parent

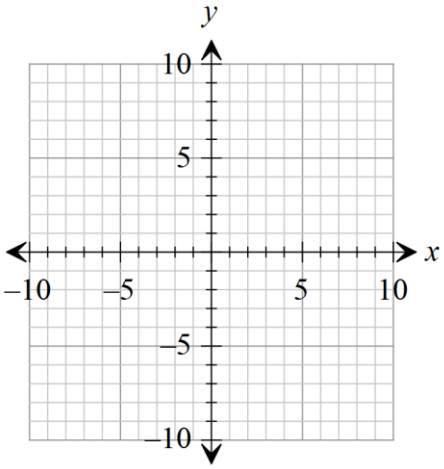
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

x	$f(x)$



Positive Interval: **Negative Interval:** **Domain:** **Range:**

14. $f(x) = -\frac{1}{4}|x+2| + 8$

Parent

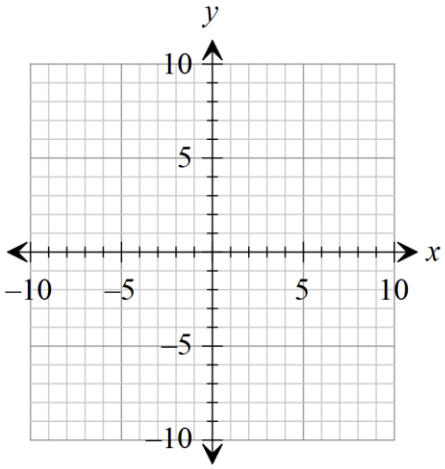
x	$f(x)$

Reflections/ Stretches/ Compressions

x	$f(x)$

Translations (Shifts)

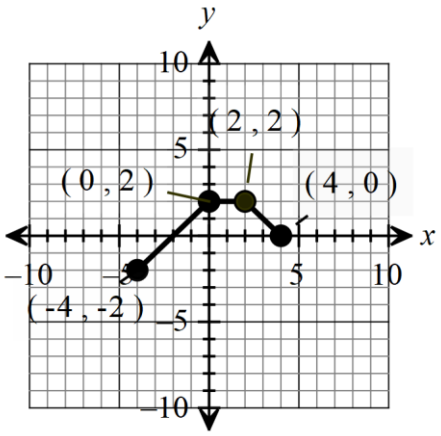
x	$f(x)$



What is the vertex? **Is this a maximum or a minimum?** **Domain:** **Range:**

15. The graph of the function f is illustrated. Use the graph of f as the first step toward graphing each of the following function.

$f(x)$



a.) $g(x) = f(x) + 3$

b.) $g(x) = f(x + 2)$

c.) $g(x) = -f(x)$

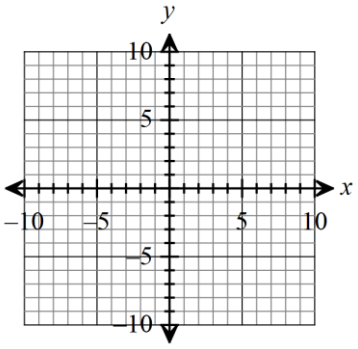
d.) $g(x) = f(x + 1) - 2$

e.) $g(x) = \frac{1}{2}f(x)$

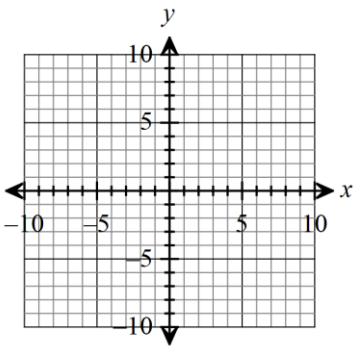
f.) $g(x) = f(-x)$

g.) $g(x) = f(2x)$

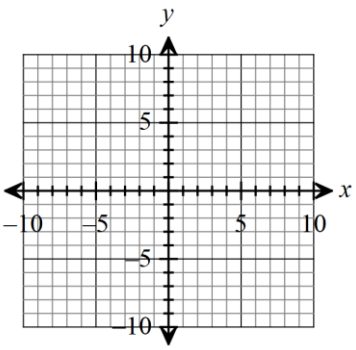
a.)



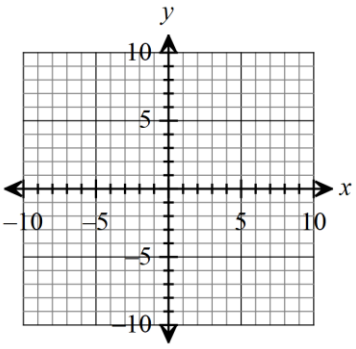
b.)



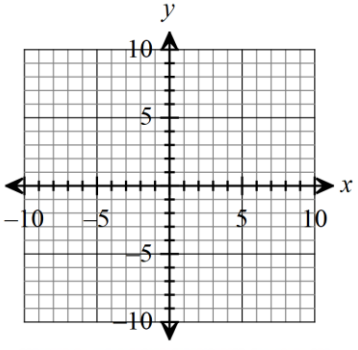
c.)



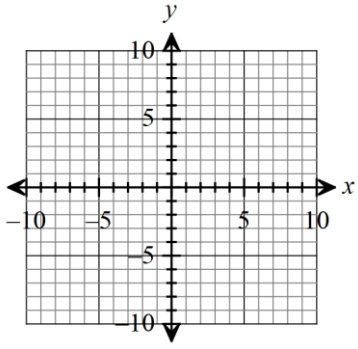
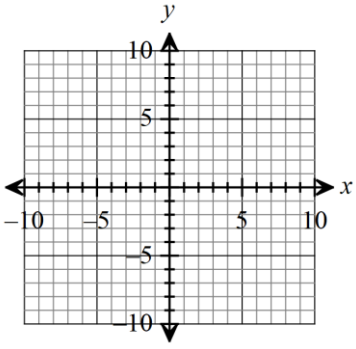
d.)



e.)



f.)



g.)