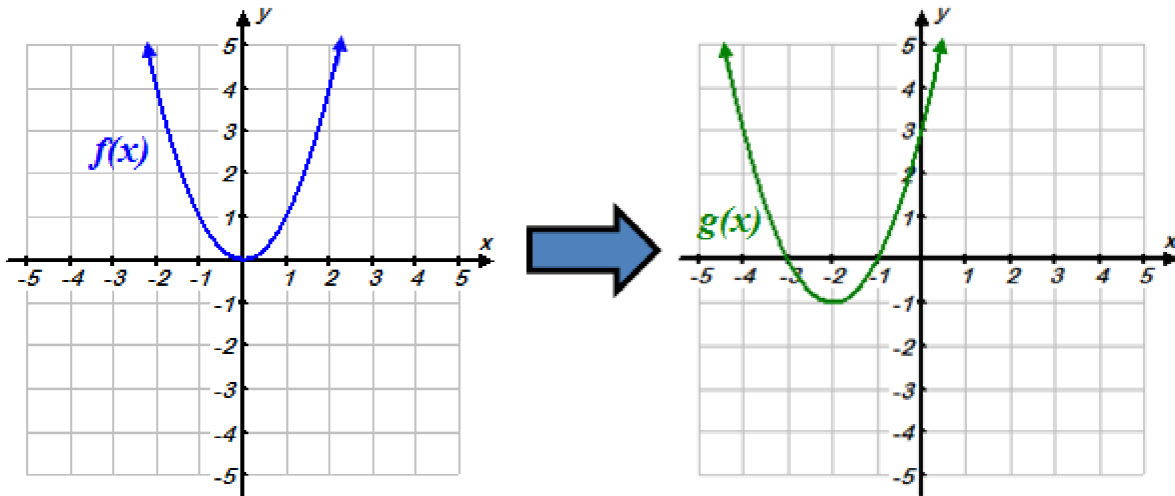


Unit 06-09 - Function Transformations**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- _____ 1. Given the graph of the parent function is $f(x) = x^2$:



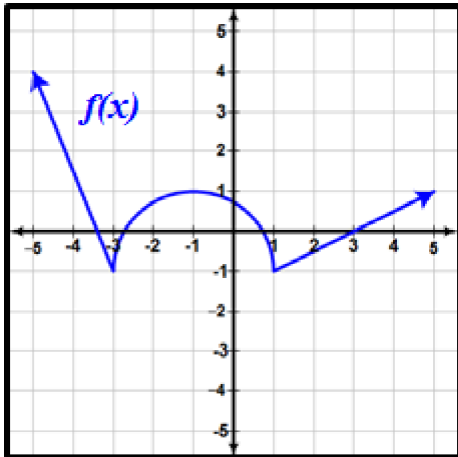
Which function below correctly describes the graph of $g(x)$?

- | | |
|---------------------------|---------------------------|
| a. $g(x) = (x - 2)^2 - 1$ | c. $g(x) = (x - 1)^2 + 2$ |
| b. $g(x) = (x + 2)^2 - 1$ | d. $g(x) = (x + 1)^2 - 2$ |

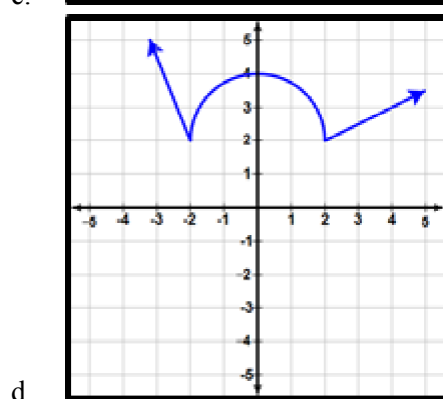
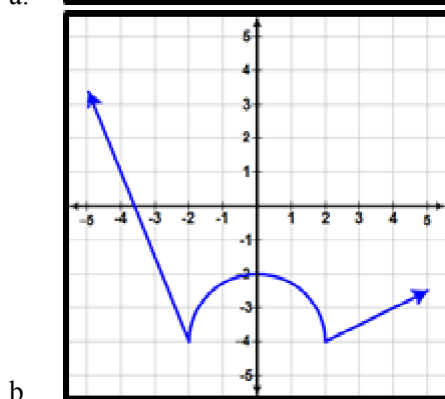
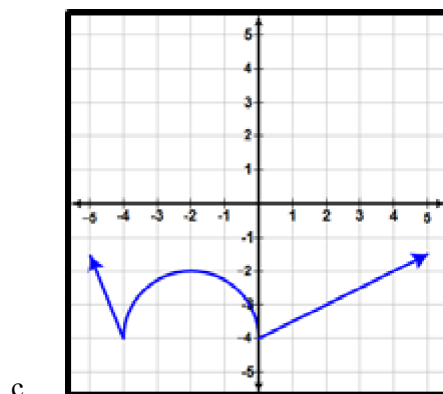
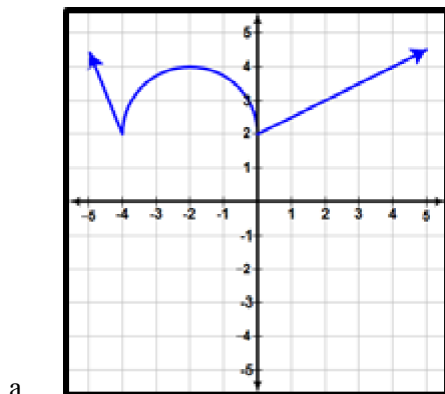
Name: _____

ID: A

- _____ 2. The parent function $f(x)$ is shown in the graph below:



Which graph below correctly shows $f(x - 1) - 3$



- _____ 3. Given the parent function $f(x) = x^2$, which of the functions listed below would be an equivalent function that has been translated **right 3 and up 2**?

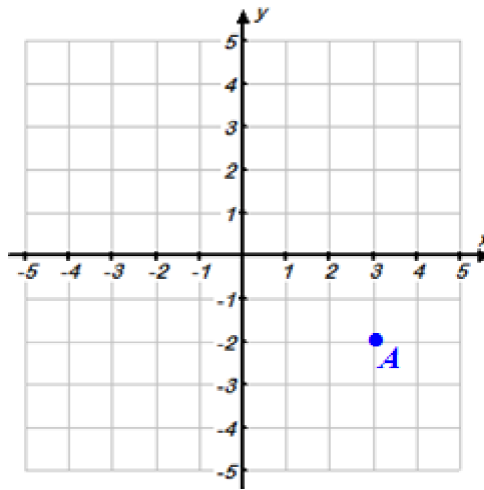
a. $g(x) = (x - 3)^2 + 2$

c. $g(x) = (x - 3)^2 - 2$

b. $g(x) = (x + 3)^2 + 2$

d. $g(x) = (x + 3)^2 - 2$

ID: A



What would be the location of the image of A after it is **reflected over the x-axis**?

- a. $A':(3,2)$
b. $A':(2,3)$

x	-1	0	1	2	3
$f(x)$	0.5	1	2	4	8

Which set of values show the same function in the table above **vertically stretched** from the x-axis by a **factor of 2**?

a.

x	-1	0	1	2	3
$f(x)$	1	2	4	8	16

b.

x	-2	0	2	4	6
$f(x)$	0.5	1	2	4	8

c.

x	-1	0	1	2	3
$f(x)$	0.25	0.5	1	2	4

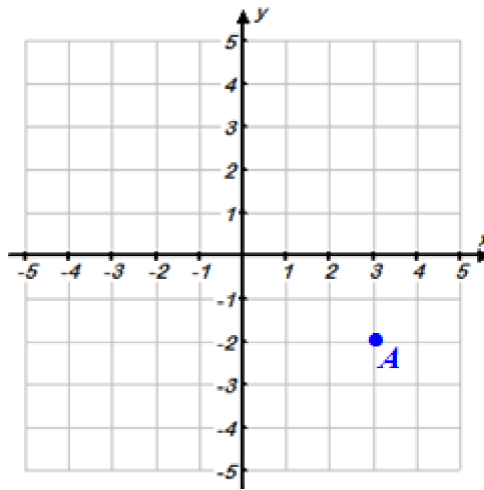
d.

x	-0.5	0	0.5	1	1.5
$f(x)$	0.5	1	2	4	8

Name: _____

ID: A

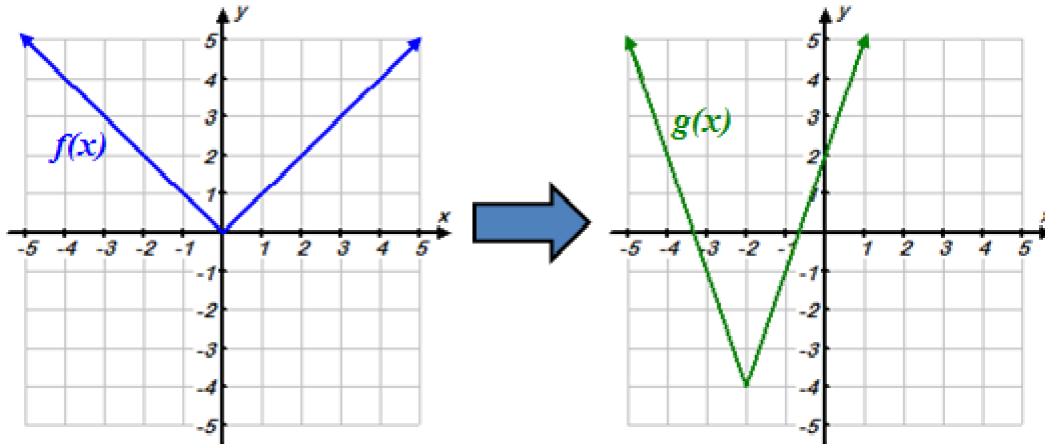
- _____ 6. Point A is plotted in the graph below.



What would be the location of the image of A after it is reflected over the x-axis and then, translated left 4 units?

- a. $A''(-1, 2)$ c. $A''(7, 2)$
b. $A''(-7, -2)$ d. $A''(2, -1)$

- _____ 7. Given the graph of the parent function is $f(x) = |x|$:



Which function below correctly describes the graph of $g(x)$?

- a. $g(x) = 3 \cdot |x - 2| + 4$ c. $g(x) = \frac{1}{3} \cdot |x - 2| - 4$
b. $g(x) = 3 \cdot |x + 2| - 4$ d. $g(x) = \frac{1}{3} \cdot |x - 2| + 4$

- _____ 8. Given the parent function $f(x) = 2^x$, how would the function $g(x) = 4 \cdot 2^{(x-3)}$ compare to $f(x)$?
- a. $g(x)$ is the same as $f(x)$ **vertically compressed by a factor of $\frac{1}{4}$** to the x-axis and **translated right 3** units
 - b. $g(x)$ is the same as $f(x)$ **vertically stretched by a factor of 4** from the x-axis and **translated right 3** units
 - c. $g(x)$ is the same as $f(x)$ **vertically compressed by a factor of $\frac{1}{4}$** to the x-axis and **translated left 3** units
 - d. $g(x)$ is the same as $f(x)$ **vertically stretched by a factor of 4** from the x-axis and **translated left 3** units
- _____ 9. If the original parabola defined by $y = x^2$, how would it change if $y = 2(x-3)^2 + 1$ were graphed instead?
- a. The parabola would be **vertically stretched factor 2**, translated **right 3** and **up 1**.
 - b. The parabola would be **vertically compressed factor $\frac{1}{2}$** , translated **left 3** and **down 1**.
 - c. The parabola would be **vertically compressed factor $\frac{1}{2}$** , translated **right 3** and **down 1**.
 - d. The parabola would be **vertically stretched factor 2**, translated **left 3** and **up 1**.