

AA2 PRACTICE TEST: TRANSFORMATIONS

No graphing calculator allowed.

C LEVEL

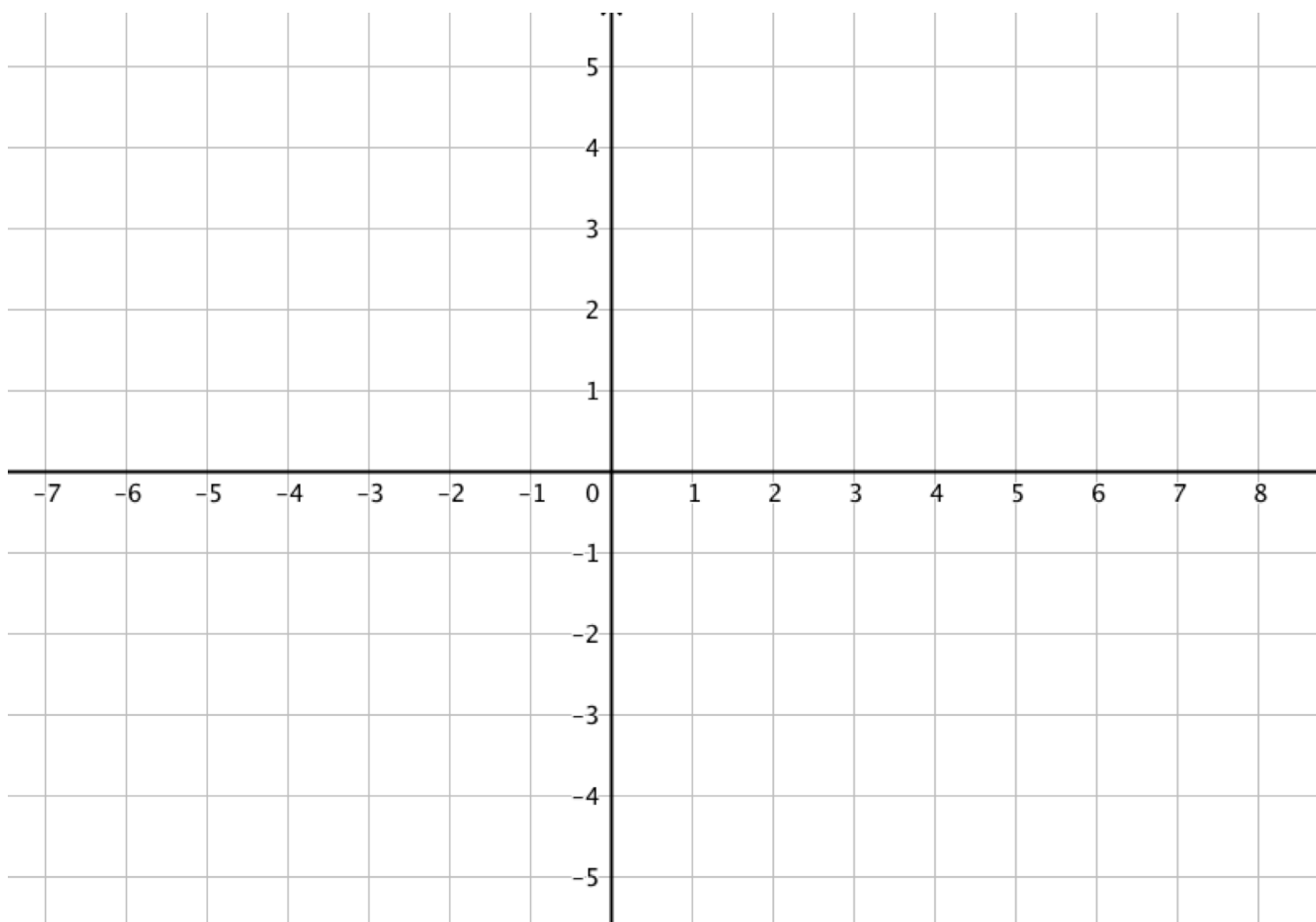
- Function $f(x) = x^2$ is moved one unit right will be written as
 - $g(x) = (x + 1)^2$
 - $g(x) = (x - 1)^2$
 - $g(x) = (x)^2 + 1$
 - $g(x) = (x)^2 - 1$
- The transformation of the graph of $g(x) = \sqrt{3x}$ can be described as...
 - vertical compression
 - vertical stretch
 - horizontal compression
 - horizontal stretch
- Given the function $f(x + h) + k$. By changing the value of k , the function will move
 - left or right
 - right only
 - up or down
 - up only
- The function $f(x) = \sqrt{x}$ is being flipped over the x -axis, the new equation is
 - $g(x) = -\sqrt{x}$
 - $g(x) = 1 - \sqrt{x}$
 - $g(x) = \sqrt{-x}$
 - $g(x) = \sqrt{x - 1}$
- The function $f(x) = |x|$ is now transform into $g(x) = |x| - 10$. The function was moved
 - 10 up
 - 10 left
 - 10 right
 - 10 down
- The transformation on $h(x) = 3x^2$ is a
 - horizontal stretch
 - vertical stretch
 - horizontal compression
 - vertical compression
- The transformation on $k(x) = \sqrt[3]{-x}$ is
 - a shift to the right
 - reflection about x -axis
 - a shift to the left
 - reflection about the y -axis

8. Function $f(x) = x^3$ is reflected about the x-axis, vertically compressed, shifted 5 units left, and shifted 5 units up will be written as

- a. $h(x) = -\left(\frac{1}{2}x - 5\right)^3 + 5$
- b. $h(x) = -\left(\frac{1}{2}x + 5\right)^3 + 5$
- c. $h(x) = -\frac{1}{2}(x + 5)^3 + 5$
- d. $h(x) = -\frac{1}{2}(x - 5)^3 + 5$

GRAPH

Graph the function $g(x) = -|x - 4| + 3$. Sketch at least the parent function and the final transformed function, $g(x)$.



MATCHING. Match the equation with corresponding graph by writing the corresponding LETTER in the prompt below the graph.

a. $f(x) = x$

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

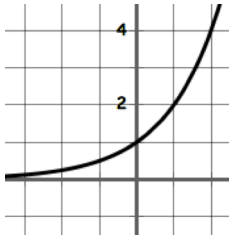
e. $h(x) = x^2$

g. $k(x) = \sqrt{x}$

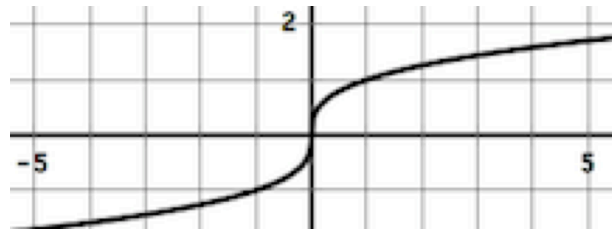
b. $j(x) = x^3$

d. $m(x) = |x|$

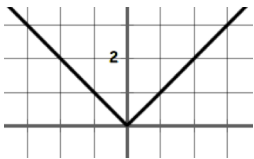
f. $p(x) = \sqrt[3]{x}$



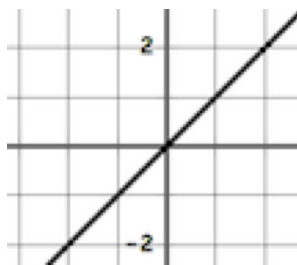
1. _____



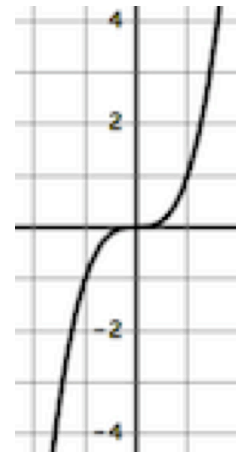
4. _____



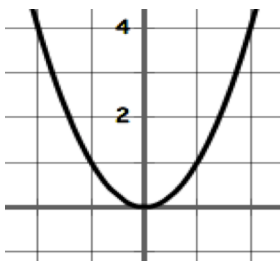
2. _____



5. _____



7. _____



3. _____



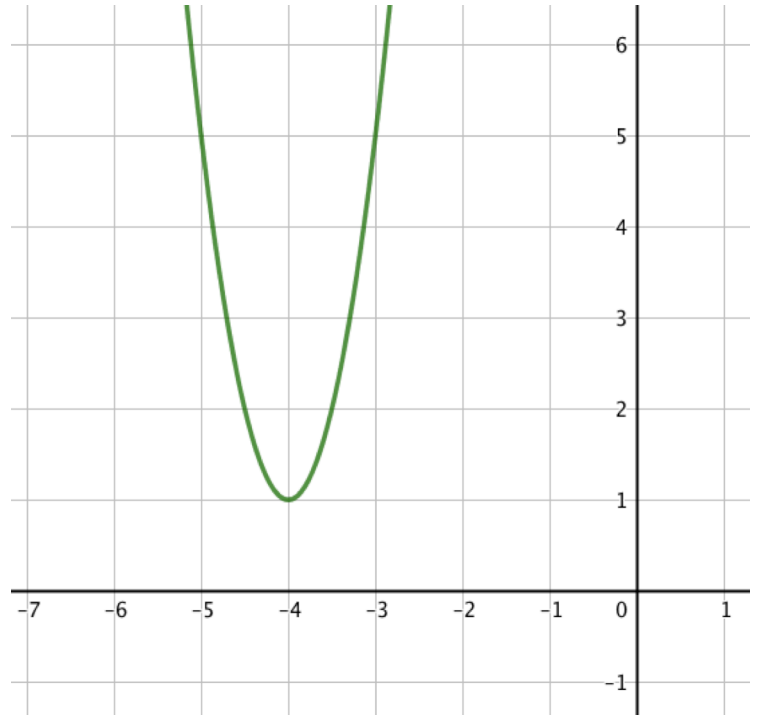
6. _____

B LEVEL

- Given the function $f(x + h) + k$, by changing the value of h , the function will move
 - right only
 - up only
 - up or down
 - left or right
- The original function is $f(x) = x^3 + 5$. The transformed function is $g(x) = x^3 - 5$. It is moved
 - 5 right and 5 down
 - 5 down
 - 5 left and 5 down
 - 10 down
- $f(x) = \frac{1}{x}$ is reflected over the x axis and moved 2 up will be written as
 - $h(x) = -\frac{1}{x+2}$
 - $h(x) = \frac{2}{x}$
 - $h(x) = -\frac{1}{x} + 2$
 - $h(x) = \frac{1}{x} - 2$
- The graph of $f(x) = x^2 - 5$ undergoes the transformation $f(x + 2)$. Its new equation will be
 - $(x + 2)^2 - 5$
 - $x^2 - 3$
 - $x^2 + 2$
 - $(x - 2)^2 - 5$
- The original function is $f(x) = \sqrt[3]{x + 3}$. The transforming function is $g(x) = \sqrt[3]{x} + 3$. It is moved
 - 3 right, 3 up
 - 3 up
 - 3 left, 3 up
 - 3 left
- Shifting $y = 2^x$ to the left by 1 unit and down by 9 units would yield the equation...
 - $y = 2^{x+1} - 9$
 - $y = 2^{x-9} + 1$
 - $y = 2^{x-1} - 9$
 - $y = 1 - 2^x - 9$
- Compared to the parent function, $g(x) = -2 - 3\sqrt{x + 4}$ is transformed by...
 - vertical stretch, reflection over x -axis, horizontal shift left by 4, vertical shift down 2
 - horizontal stretch, reflection over x -axis, horizontal shift right 2, vertical shift up 4.
 - vertical stretch, reflection over x -axis and y -axis,, horizontal shift right 4
 - horizontal compression, reflection over y -axis, horizontal shift left by 4 vertical shift up 2

FIND THE EQUATION

Find and clearly state the equation of the transformed graph.



AA1 LEARNING TARGETS

1. Solve $|x - 12| = 6$

5. Solve $\sqrt{x + 5} = 4$

2. Solve $-3x > 9$

3. Solve $x^2 + 9x + 20 = 0$

6. Solve for "x": $y = ax - c$

4. Solve $\frac{x+2}{2} = \frac{2x}{7}$

7. Graph the solution of $y < \frac{2}{3}x - 2$

