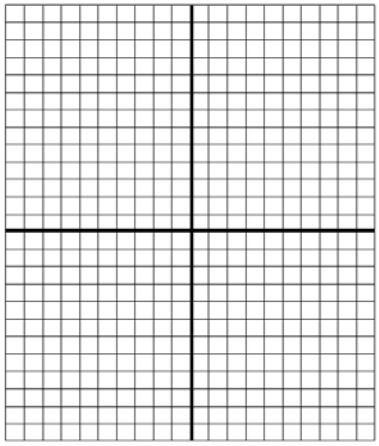
Name: _____ Date: _____ Period: _____

A8 – Transformations of Cube Root Functions

Graph each function, what is the domain, range, x-intercept, y-intercept

1. $g(x) = \sqrt[3]{x} + 4$



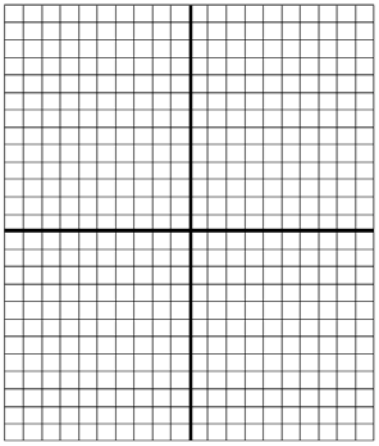
Domain: _____

Range: _____

x-int: _____

y-int: _____

2. $g(x) = \sqrt[3]{x+4}$



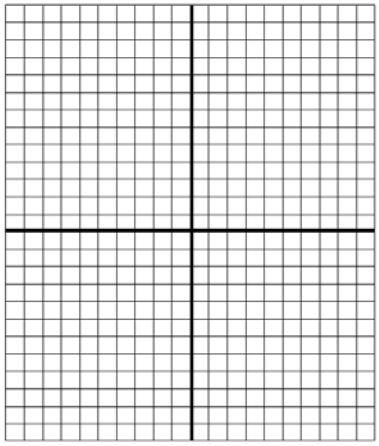
Domain: _____

Range: _____

x-int: _____

y-int: _____

3. $y = -2\sqrt[3]{x}$



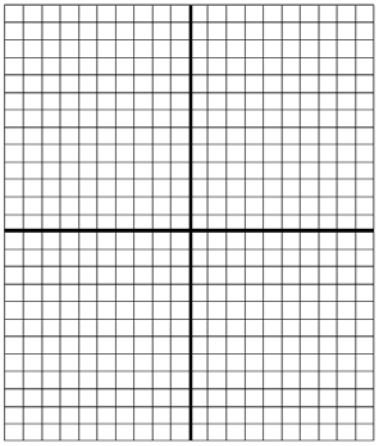
Domain: _____

Range: _____

x-int: _____

y-int: _____

4. $y = \sqrt[3]{x+2}$



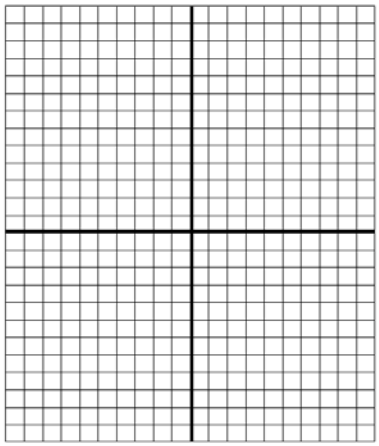
Domain: _____

Range: _____

x-int: _____

y-int: _____

5. $f(x) = \frac{1}{4}\sqrt[3]{x}$



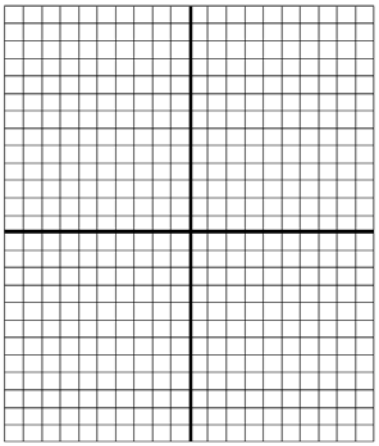
Domain: _____

Range: _____

x-int: _____

y-int: _____

6. $y = \sqrt[3]{x-3} - 5$



Domain: _____

Range: _____

x-int: _____

y-int: _____

The graph of $g(x)$ can be obtained from the graph of the parent function $f(x) = \sqrt[3]{x}$ by using the given transformations. Write an equation for the function $g(x)$.

7. Reflect the graph over the x-axis, then translate it 2 units right.

8. Vertically compress the graph by a factor of $\frac{1}{3}$, then translate it 4 units left and 1 unit up.

9. Vertically stretch the graph by a factor of 6, then translate it 1 unit right and 7 units up.

10. Horizontally stretch the graph by a factor of $\frac{1}{2}$, then translate it 2 units down.

11. _____ Which function has a graph that is not a translation of the graph of the parent function $f(x) = \sqrt[3]{x}$?

A. $g(x) = \sqrt[3]{x - 3.7}$

B. $g(x) = \sqrt[3]{x} + 3.7$

C. $g(x) = 3.7\sqrt[3]{x}$

D. $g(x) = \sqrt[3]{x + 3.7}$

12. _____ You graph the function $f(x) = \sqrt[3]{x}$. You reflect the graph across the x-axis, stretch the graph vertically by a factor of 2, and translate the graph 2 units to the right. Which of the following is an equation for the resulting graph?

A. $g(x) = -2\sqrt[3]{x + 2}$

B. $g(x) = -2\sqrt[3]{x - 2}$

C. $g(x) = -2\sqrt[3]{x} - 2$

D. $g(x) = \sqrt[3]{-2x} + 2$