

AA PREP: GRAPHING CUBIC FUNCTIONS WITH TRANSFORMATIONS—WORKSHEET #1

Graph the cubic parent function. Then, graph each of the following cubic functions using transformations. State domain and range.

1.  $y = x^3$

x	y
-2	-8
-1	-1
0	0
1	1
2	8

Domain:  $\mathbb{R} (-\infty, \infty)$  Range:  $\mathbb{R} (-\infty, \infty)$

2.  $g(x) = (x+4)^3$

H TRANSLATION  
4  $\leftarrow$

Domain:  $\mathbb{R} (-\infty, \infty)$  Range:  $\mathbb{R} (-\infty, \infty)$

3.  $y = x^3 - 4$

V TRANSLATION  
4  $\downarrow$

Domain:  $\mathbb{R} (-\infty, \infty)$  Range:  $\mathbb{R} (-\infty, \infty)$

4.  $y = \frac{1}{4}x^3$

V COMP  
 $\times \frac{1}{4}$   
(y-VALUES)  
 $\times \frac{1}{4}$

Domain:  $\mathbb{R} (-\infty, \infty)$  Range:  $\mathbb{R} (-\infty, \infty)$

5.  $g(x) = -x^3$

REFLECTS  
OVER  
X-AXIS

Domain:  $\mathbb{R} (-\infty, \infty)$  Range:  $\mathbb{R} (-\infty, \infty)$

6.  $f(x) = 4x^3$

V STRETCH  
 $\times 4$   
(y-VALUES)  
 $\times 4$

Domain:  $\mathbb{R} (-\infty, \infty)$  Range:  $\mathbb{R} (-\infty, \infty)$