

Effects of Transformations

Name: _____

Given the cubic parent function $f(x) = x^3$. Apply the following transformations, fill in the tables, and write descriptions detailing the changes to the function.

1) Apply the transformation: $2f(x)$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	f(x)
0	
1	
2	
3	

x	$2f(x)$
0	
1	
2	
3	

2) Apply the transformation: $f(2x)$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	f(x)
	0
	1
	8
	27

x	$f(2x)$
	0
	1
	8
	27

3) Apply the transformation: $f(x) + 2$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	f(x)
0	
1	
2	
3	

x	$f(x) + 2$
0	
1	
2	
3	

4) Apply the transformation: $f(x + 2)$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	f(x)
	0
	1
	8
	27

x	$f(x+2)$
	0
	1
	8
	27

5) Apply the transformation: $f(x - 2) + 3$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	f(x)

x	$f(x-2)+3$

Given the cube root parent function $g(x) = \sqrt[3]{x}$. Apply the following transformations, fill in the tables, and write descriptions detailing the changes to the function.

6) Apply the transformation: $\frac{1}{3}g(x)$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	g(x)
0	
1	
8	
27	

x	$\frac{1}{3}g(x)$
0	
1	
8	
27	

7) Apply the transformation: $g(\frac{1}{3}x)$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	g(x)
	0
	1
	2
	3

x	$g(\frac{1}{3}x)$
	0
	1
	2
	3

8) Apply the transformation: $g(x) - 5$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	g(x)
0	
1	
8	
27	

x	$g(x) - 5$
0	
1	
8	
27	

9) Apply the transformation: $g(x - 3)$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	g(x)
	0
	1
	2
	3

x	$g(x-3)$
	0
	1
	2
	3

10) Apply the transformation: $g(x - 4) - 1$.

What is the new equation?

How does this transformation affect the x and y values in the table?

x	g(x)

x	$g(x-4)-1$