

INVESTIGATING TRANSFORMATIONS

1. Fill out the tables below for each function, and then graph each function on the same graph.

a. $f(x) = x$

x	f(x)
-2	
-1	
0	
1	
2	

b. $g(x) = -x$

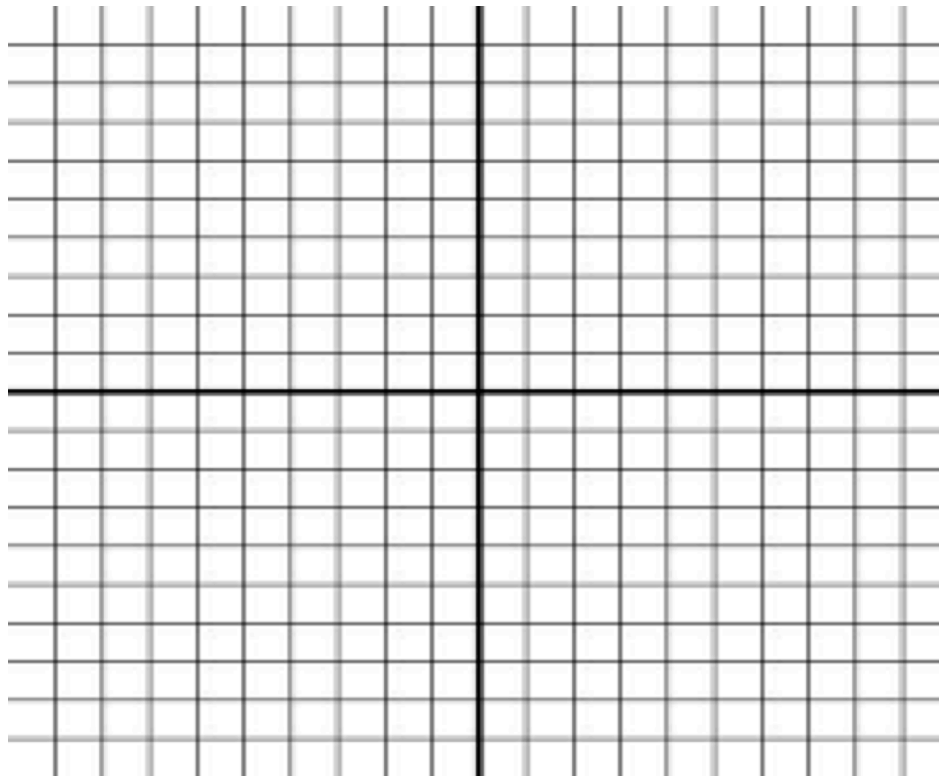
x	g(x)
-2	
-1	
0	
1	
2	

c. $h(x) = x + 2$

x	h(x)
-2	
-1	
0	
1	
2	

d. $j(x) = x - 2$

x	j(x)
-2	
-1	
0	
1	
2	



Consider the following questions given that $f(x)$ is the parent function.

2. What did the negative sign do to the graph of $g(x)$?

3. What did the $+2$ do to the graph of $h(x)$?

4. What did the -2 do to the graph of $j(x)$?

5. Fill out the tables below for each function, and then graph each function on the same graph.

a. $f(x) = x^2$

x	f(x)
-2	
-1	
0	
1	
2	

b. $g(x) = -x^2$

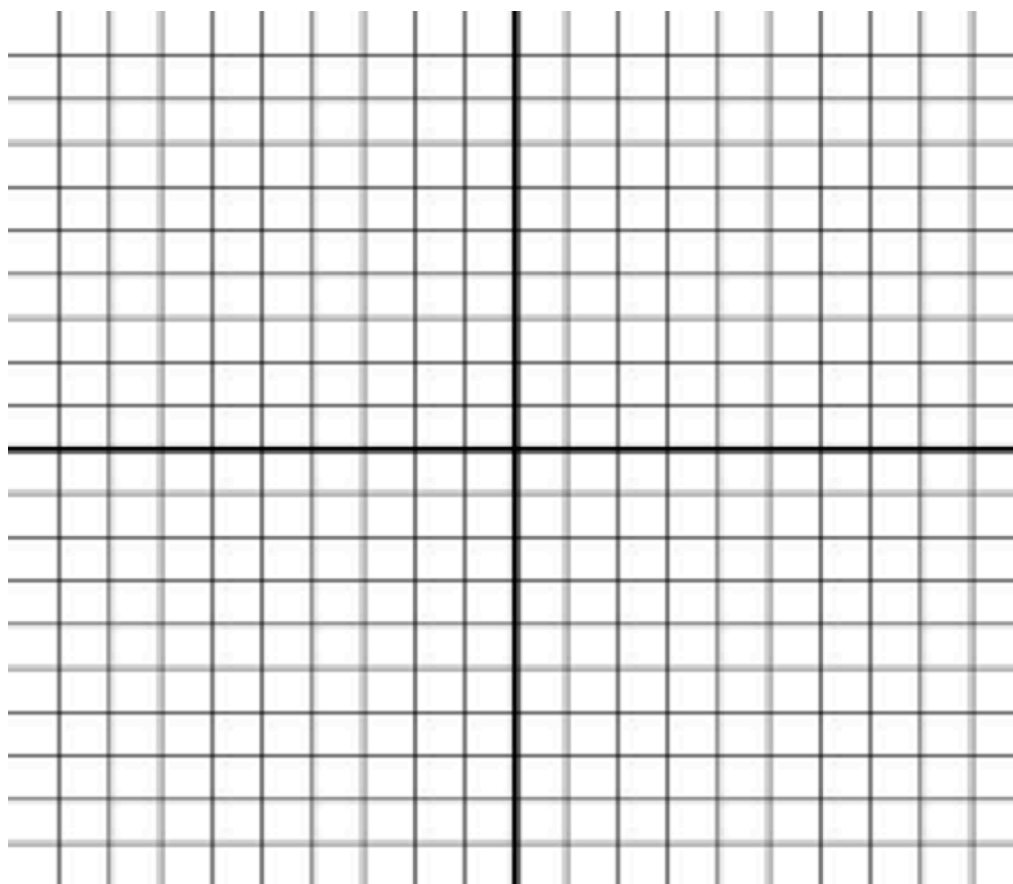
x	g(x)
-2	
-1	
0	
1	
2	

c. $h(x) = x^2 + 2$

x	h(x)
-2	
-1	
0	
1	
2	

d. $j(x) = (x + 2)^2$

x	j(x)
-4	
-3	
-2	
-1	
0	



Consider the following questions given that $f(x)$ is the parent function.

6. What did the negative sign do to the graph of $g(x)$?

7. What did the $+2$ do to the graph of $h(x)$?

8. What did the $+2$ do to the graph of $j(x)$?

9. What is the difference between the $+2$ in $h(x)$ versus $j(x)$?

10. If $j(x) = (x - 2)^2$, what would be different about the graph of $j(x) = (x + 2)^2$?

11. Fill out the tables below for each function, and then graph each function on the same graph.

a. $f(x) = x^3$

x	f(x)
-2	
-1	
0	
1	
2	

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

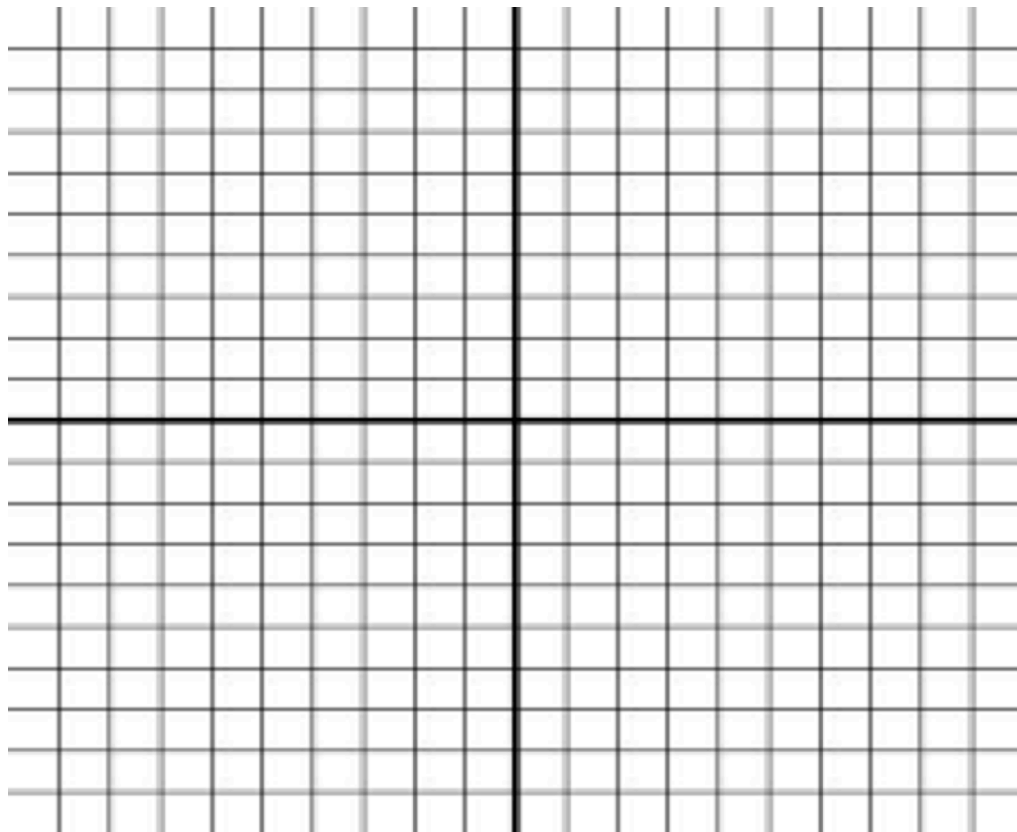
x	g(x)
-2	
-1	
0	
1	
2	

c. $h(x) = x^3 + 2$

x	h(x)
-2	
-1	
0	
1	
2	

d. $j(x) = (x + 2)^3$

x	j(x)
-4	
-3	
-2	
-1	
0	



Consider the following questions given that $f(x)$ is the parent function.

12. What did the negative sign do to the graph of $g(x)$?

13. What did the $+2$ do to the graph of $h(x)$?

14. What did the $+2$ do to the graph of $j(x)$?

15. What is the difference between the $+2$ in $h(x)$ versus $j(x)$?

16. If $j(x) = (x - 2)^2$, what would be different about the graph of $j(x) = (x + 2)^2$?

17. Fill out the tables below for each function, and then graph each function on the same graph.

a. $f(x) = \sqrt{x}$

x	f(x)
-1	
0	
1	
4	
9	

b. $g(x) = -\sqrt{x}$

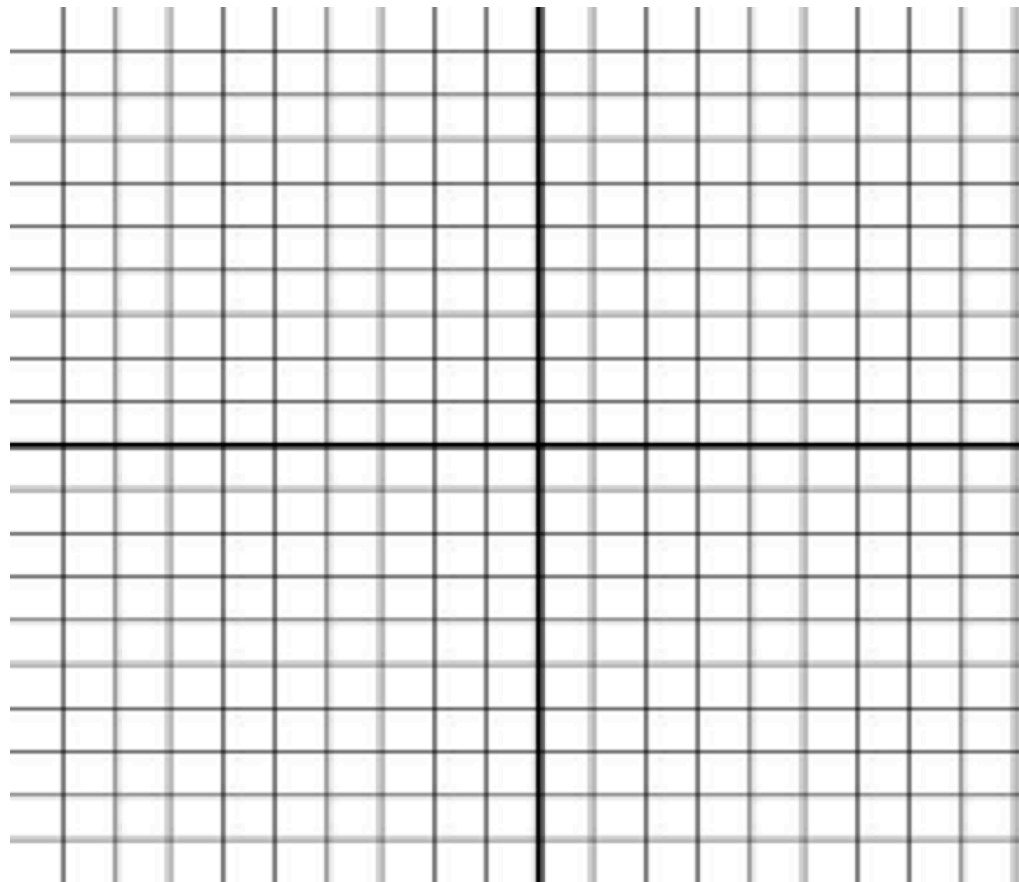
x	g(x)
-1	
0	
1	
4	
9	

c. $h(x) = \sqrt{x} + 2$

x	h(x)
0	
1	
4	
9	
25	

d. $j(x) = \sqrt{x + 2}$

x	j(x)
-2	
-1	
0	
2	
7	



Consider the following questions given that $f(x)$ is the parent function.

18. What did the negative sign do to the graph of $g(x)$?

19. What did the +2 do to the graph of $h(x)$?

20. What did the +2 do to the graph of $j(x)$?

21. If $h(x) = \sqrt{x} - 2$, how would the graph look?

22. Fill out the tables below for each function, and then graph each function on the same graph.

a. $f(x) = |x|$

x	f(x)
-2	
-1	
0	
1	
2	

b. $g(x) = -|x|$

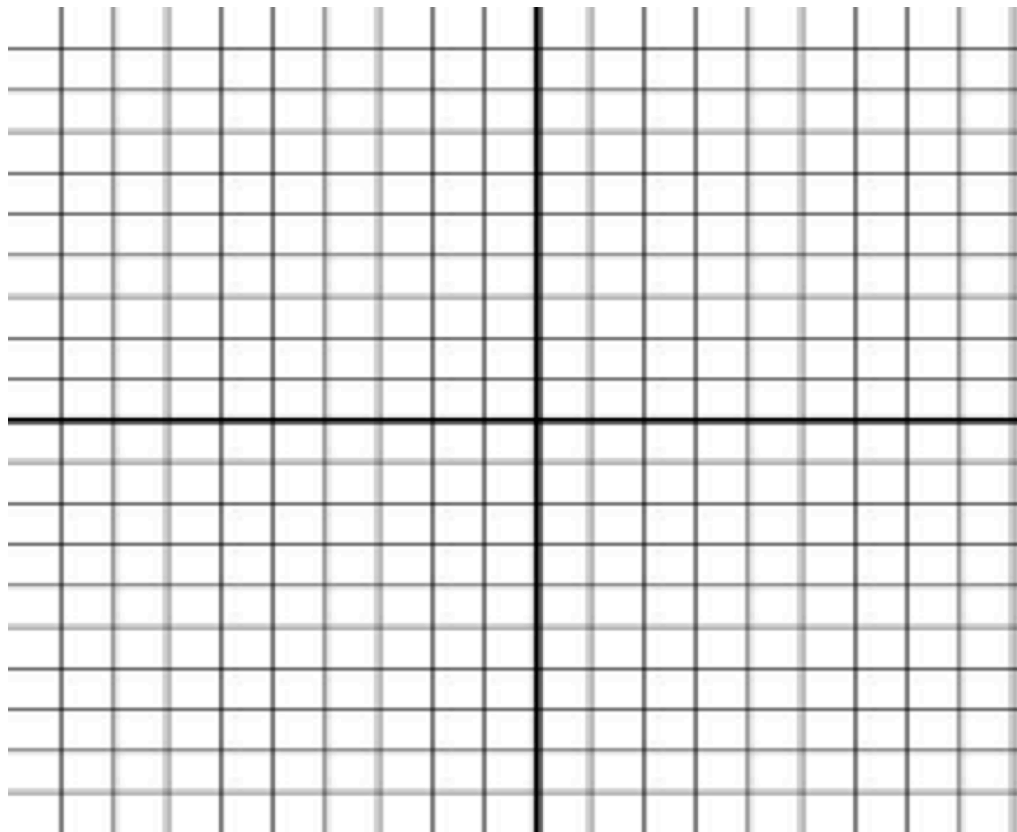
x	g(x)
-2	
-1	
0	
1	
2	

c. $h(x) = |x| + 2$

x	h(x)
-2	
-1	
0	
1	
2	

d. $j(x) = |x + 2|$

x	j(x)
-4	
-3	
-2	
-1	
0	



Consider the following questions given that $f(x)$ is the parent function.

23. What did the negative sign do to the graph of $g(x)$?

24. What did the $+2$ do to the graph of $h(x)$?

25. What did the $+2$ do to the graph of $j(x)$?

26. If $h(x) = |x| - 2$, how would the graph look?

27. If $j(x) = |x - 2|$, how would the graph look?

28. Fill out the tables below for each function, and then graph each function on the same graph.

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

x	f(x)
-8	
-1	
0	
1	
8	

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

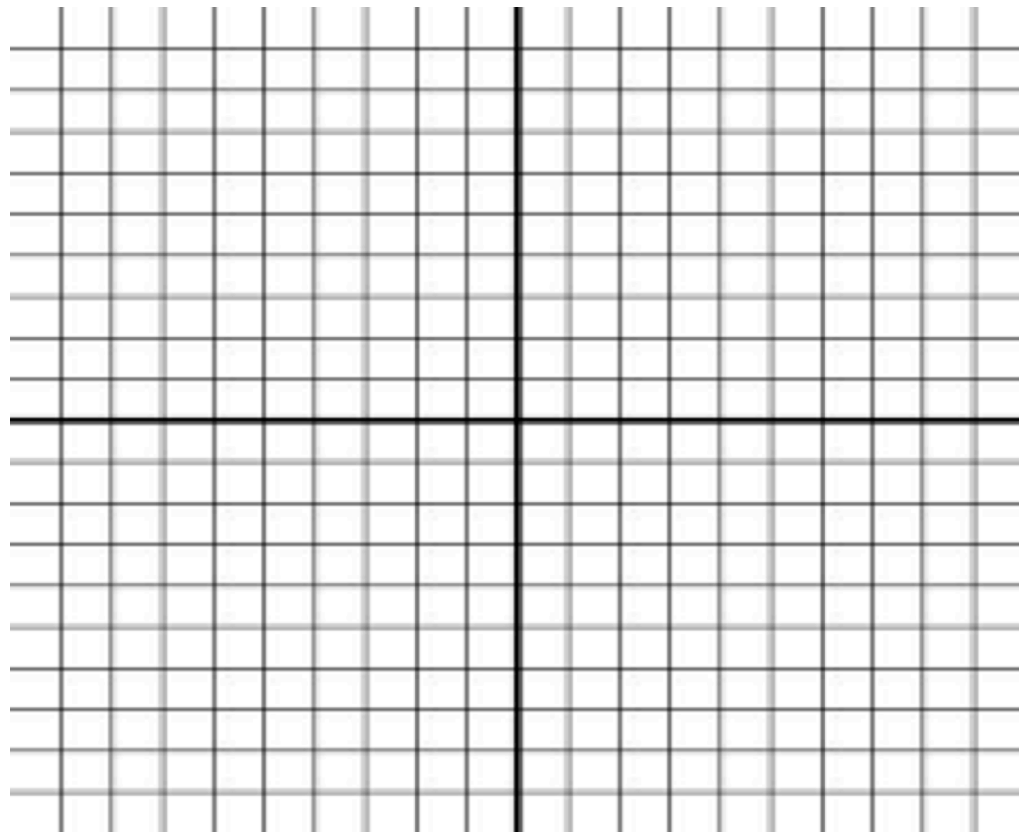
x	g(x)
-8	
-1	
0	
1	
8	

c. $h(x) = \sqrt[3]{x} + 2$

x	h(x)
-8	
-1	
0	
1	
8	

d. $j(x) = \sqrt[3]{x + 2}$

x	j(x)
-10	
-3	
-2	
-1	
6	



Consider the following questions given that $f(x)$ is the parent function.

29. What did the negative sign do to the graph of $g(x)$?

30. What did the +2 do to the graph of $h(x)$?

31. What did the +2 do to the graph of $j(x)$?

32. If $h(x) = \sqrt[3]{x} - 5$, how would the graph look?

33. If $j(x) = \sqrt[3]{x - 2}$, how would the graph look?

