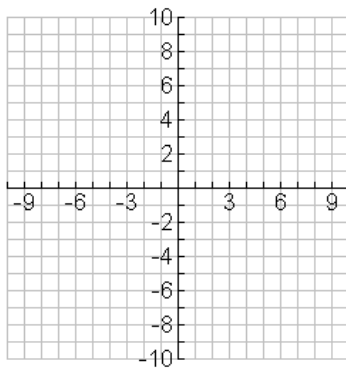


Graph the following functions without using technology. Feel free to use a graphing calculator to check your answer, but you should be able to look at the function and apply what you learned in the lesson to move its parent function. Also, state the domain and range for each function.

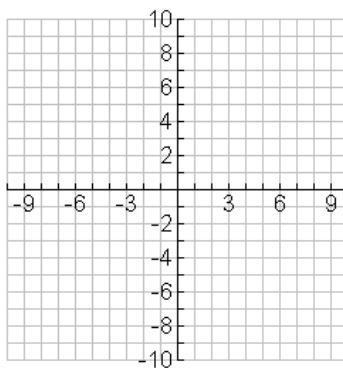
1.  $f(x) = (x - 2)^2 + 4$

Domain: \_\_\_\_\_  
Range: \_\_\_\_\_



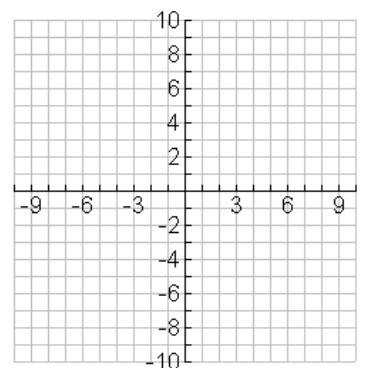
2.  $f(x) = -(x - 3)^3 - 1$

Domain: \_\_\_\_\_  
Range: \_\_\_\_\_



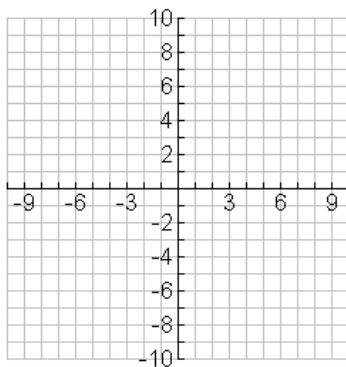
3.  $f(x) = \sqrt{x + 1} + 4$

Domain: \_\_\_\_\_  
Range: \_\_\_\_\_



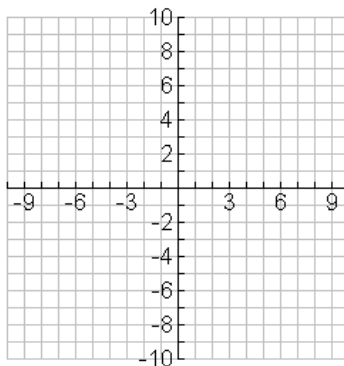
4.  $f(x) = -\sqrt[3]{x - 1} + 5$

Domain: \_\_\_\_\_  
Range: \_\_\_\_\_



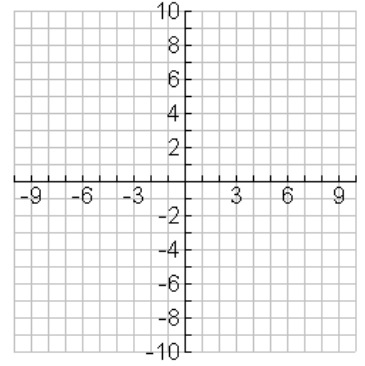
5.  $f(x) = |x - 3| - 2$

Domain: \_\_\_\_\_  
Range: \_\_\_\_\_



6.  $f(x) = 2^{x+1} - 3$

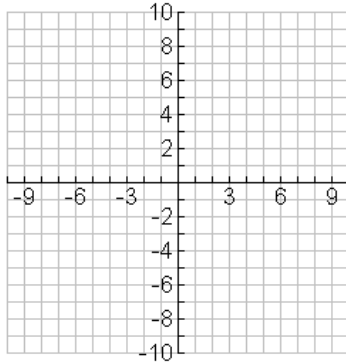
Domain: \_\_\_\_\_  
Range: \_\_\_\_\_



7.  $f(x) = -(x+5)^2 - 1$

Domain: \_\_\_\_\_

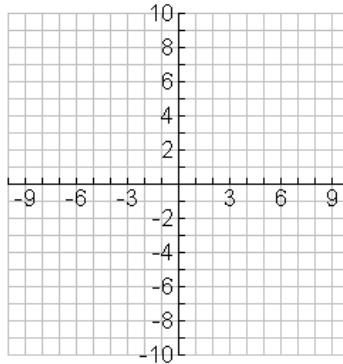
Range: \_\_\_\_\_



8.  $f(x) = (x+3)^3 + 4$

Domain: \_\_\_\_\_

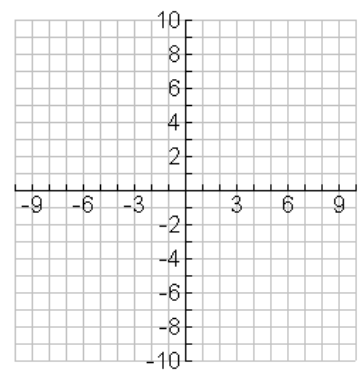
Range: \_\_\_\_\_



9.  $f(x) = -\sqrt{x-3} - 6$

Domain: \_\_\_\_\_

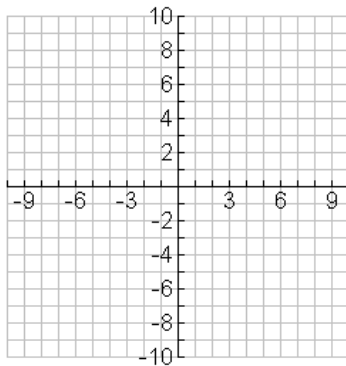
Range: \_\_\_\_\_



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

Domain: \_\_\_\_\_

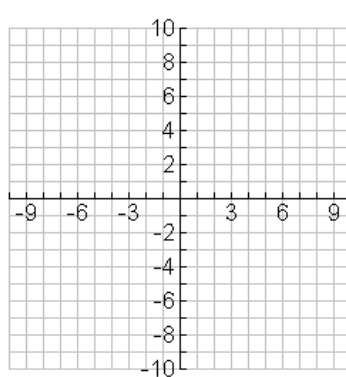
Range: \_\_\_\_\_



11.  $f(x) = -|x+2| - 7$

Domain: \_\_\_\_\_

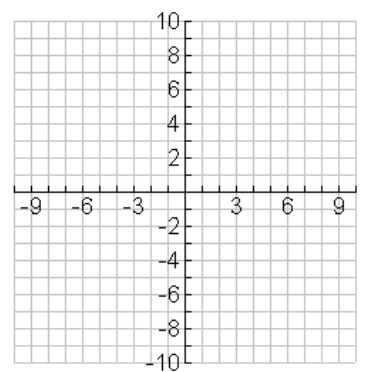
Range: \_\_\_\_\_



12.  $f(x) = 2^{x-3} + 2$

Domain: \_\_\_\_\_

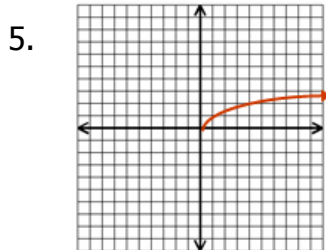
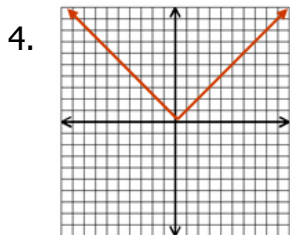
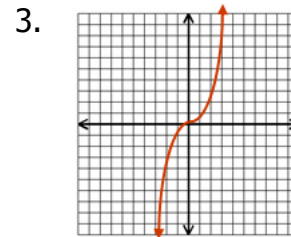
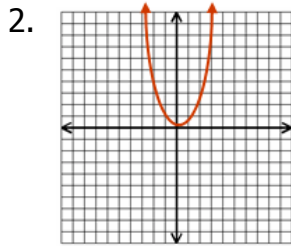
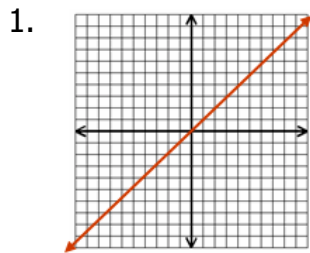
Range: \_\_\_\_\_



Match the name & equation to the graph.

**Names:** A) absolute value B) cubic C) linear D) quadratic E) radical

**Equations:** F)  $y = x$  G)  $y = x^2$  H)  $y = x^3$  I)  $y = |x|$  J)  $y = \sqrt{x}$



$$y = a(x-h)^2 + k$$

\_\_\_\_\_ 11) describe the effect of **a** on the graph.

\_\_\_\_\_ 12) describe the effect of **h** on the graph.

\_\_\_\_\_ 13) describe the effect of **k** on the graph.

Identify the parent function name and describe the transformation for each function.

6.  $g(x) = 3(x-1)^2 - 6$  Name: \_\_\_\_\_

Transformation: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

7.  $f(x) = 5(x-2)^3 - 11$  Name: \_\_\_\_\_

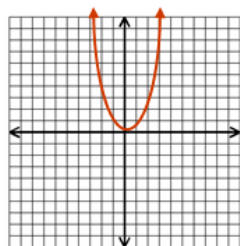
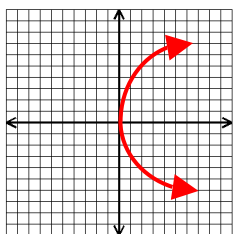
Transformation: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

8.  $h(x) = \frac{2}{3}|x+6|$  Name: \_\_\_\_\_ Transformation 1) \_\_\_\_\_ 2) \_\_\_\_\_

9.  $f(x) = x + 6$  Name: \_\_\_\_\_ Transformation 1) \_\_\_\_\_

10. What is the effect on the graph of the function  $y = x^2 + 2$  when it is changed to  $y = x^2 - 3$ ? \_\_\_\_\_

Is it a function? 11-14



| x   | y  |
|-----|----|
| -13 | -1 |
| -5  | 0  |
| -2  | 2  |
| 0   | 2  |
| 1   | 5  |

| x  | y  |
|----|----|
| -1 | -1 |
| 0  | 0  |
| 1  | 1  |
| 2  | 2  |
| 4  | 5  |
| 4  | 7  |

**Is It Linear, Quadratic, or Neither?**

15.

| Road Trip         |       |
|-------------------|-------|
| Distance Traveled |       |
| gallons           | miles |
| 8.7               | 263   |
| 9.8               | 296   |
| 10.1              | 324   |
| 10.1              | 305   |
| 10.6              | 332   |
| 11.2              | 338   |
| 12.3              | 368   |

16.

| My Heating Bills |             |
|------------------|-------------|
| Temp             | Amount (\$) |
| 36               | 83          |
| 38               | 91          |
| 38               | 99          |
| 42               | 107         |
| 42               | 115         |
| 44               | 123         |
| 49               | 131         |

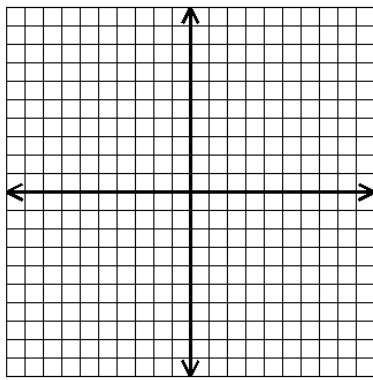
17.

| x  | y  |
|----|----|
| -3 | 10 |
| -1 | -8 |
| 1  | 6  |
| 3  | 52 |

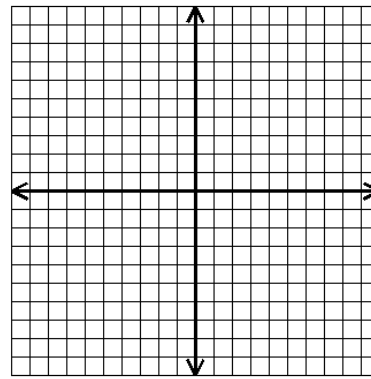
**Name the Parent Function. List the transformations. Graph each equation.**

18.  $y = (x + 2)^2 - 3$

19.  $y = 2|x - 3| + 2$  1)



1)



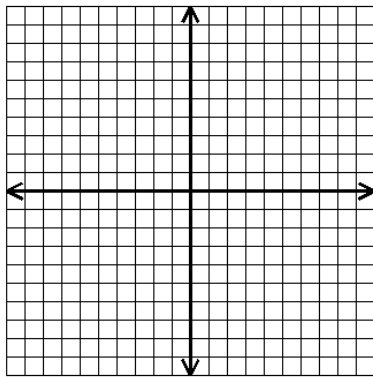
2)

2)

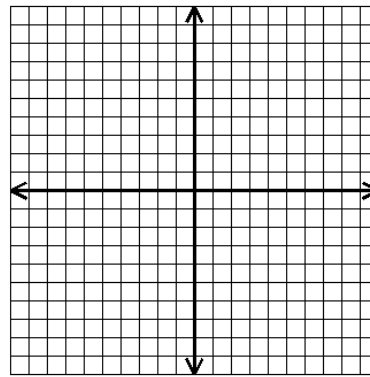
3)

20.  $y = -4x + 5$  1)

21.  $y = \sqrt{x + 5}$  1)



2)



\_\_\_\_\_ 22) Jimmy takes 5 naps per day. Is this statement Linear or Quadratic?

\_\_\_\_\_ 23) Steven shoots a rocket from the ground. Is this statement Linear or Quadratic?