UNIT 1: Parent Functions and Transformations

HW #70: SHOW ALL WORK on the worksheet

What is the definition of a function?

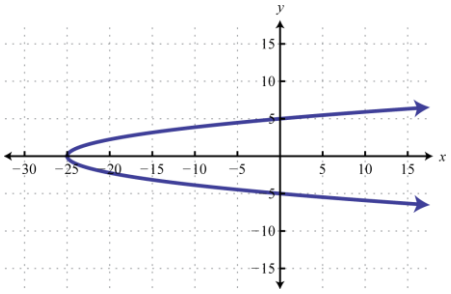
Explain whether the following relations are functions or not.

1.

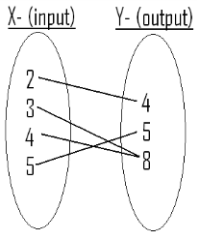
| x | -1 | 0 | 2 | -1 | 4 |
|---|---|---|---|---|---|
| y | 3 | 6 | 7 | 3 | 8 |

2. $\{(1,4),(3,6),(5,7),(3,9),(8,10)\}$

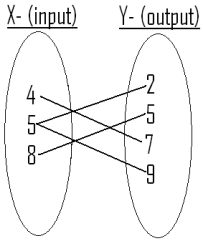
3.



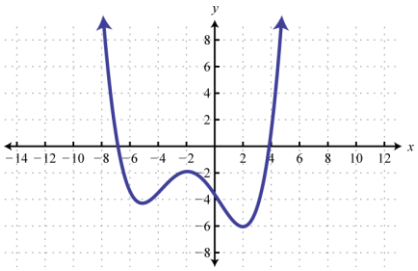
4.




5.

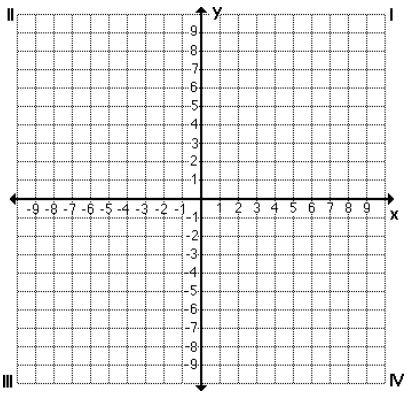



6.

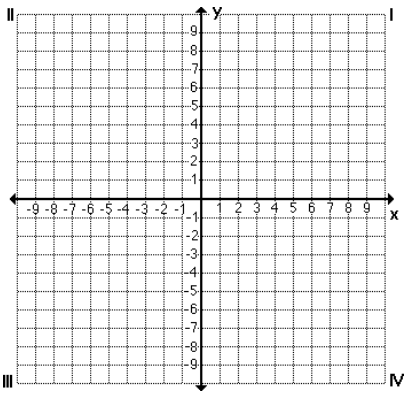


Sketch a graph of the following parent functions. Label *at least* 4 points on the graph for each.

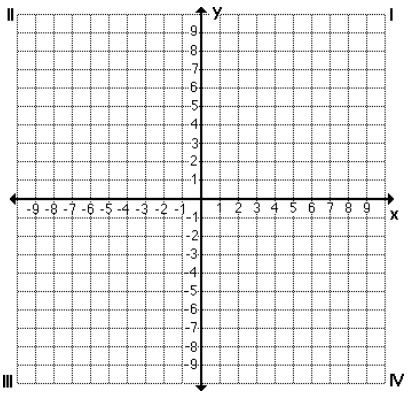
7. $y = x$



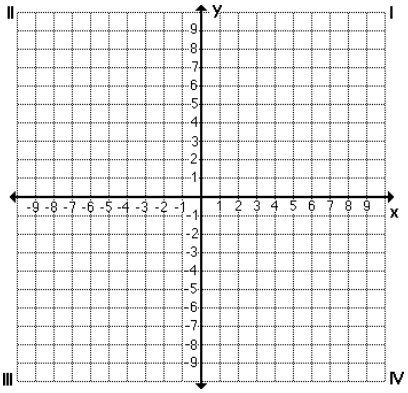
8. $y = x^2$



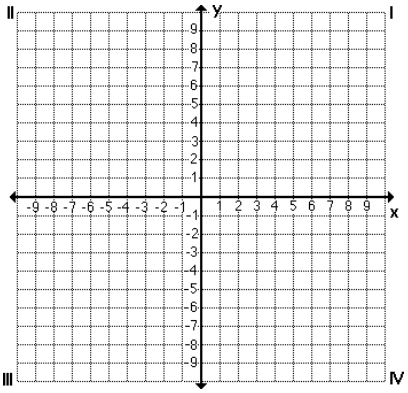
9. $y = x^3$



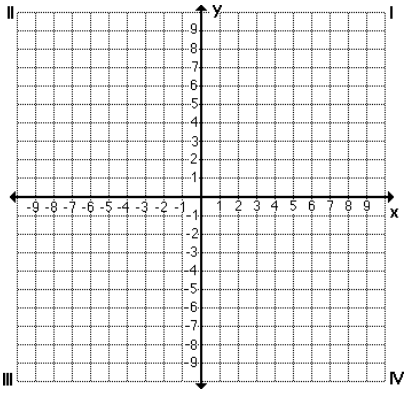
10. $y = \sqrt{x}$



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

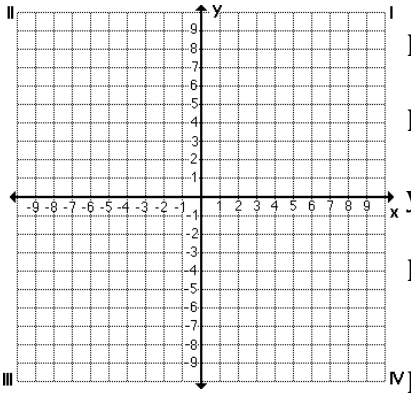


12. $y = |x|$



Graph the following transformations and identify the key characteristics listed.

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



Domain:

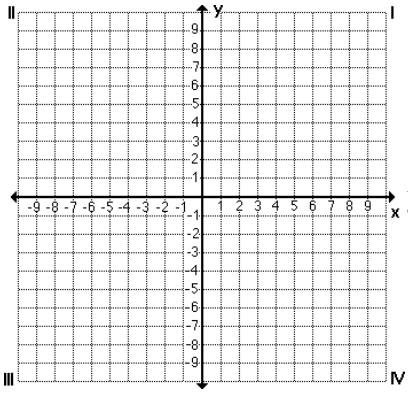
Range:

y-intercept:

End Behavior:

Intervals of increase/decrease:

14. $f(x) = \frac{1}{2}x^3 - 3$



Domain:

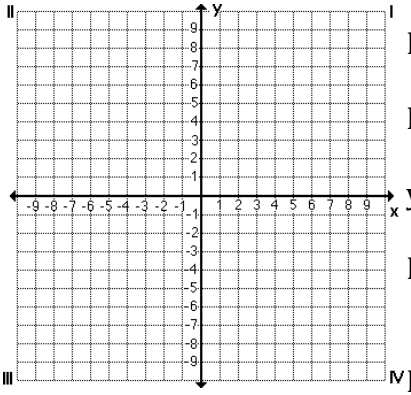
Range:

y-intercept:

End Behavior:

Intervals of increase/decrease:

15. $f(x) = \sqrt{x+3} - 2$



Domain:

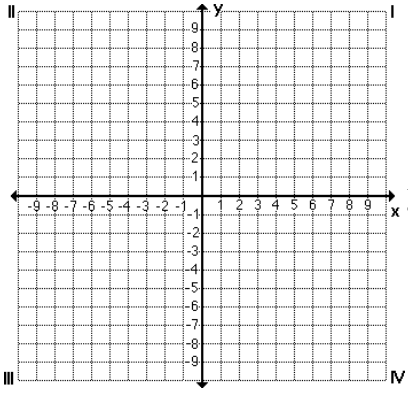
Range:

y-intercept:

End Behavior:

Intervals of increase/decrease:

16. $f(x) = -|x| + 4$



Domain:

Range:

y-intercept:

End Behavior:

Intervals of increase/decrease: