

Key

## Quick Check Functions and Their Graphs A

1. What does the graph for  $y = -2(x - 3)^2 + 1$  look like?

$a = -2$      $b = 1$      $c = 3$      $d = 1$   
bcad  
(x+3, -2y+1)

2. What is the Axis of Symmetry for  $y = (x + 4)^2 - 5$ ?

3. What is the Horizontal Shift for  $y = (x + 4)^2 - 5$ ?

x = -4  
4 left

4. What kind of function is  $y = |x + 1| - 3$ ? How has it been shifted?

Absolute value left 1, down 3

5. What is the Horizontal Shift for  $y = |x + 1| - 3$ ?

1 left

6. What is the Vertical Shift for  $y = |x + 1| - 3$ ?

3 down

7. What kind of function is  $y = 2\sqrt{x - 3} - 7$ ?

Absolute value

8. In the function  $y = 2\sqrt{x - 3} - 7$  do the y values increase faster (steeper graph) or more slowly (flatter graph) than in the parent function?

a = 2 → 2y - 7  
↑ faster

A. Faster    B. More slowly

9. What is the direction for  $y = 2\sqrt{x - 3} - 7$ ?

A. Up    B. Down

10. What is the direction for  $y = -\sqrt{x + 1} - 5$ ? Which axis has it been reflected over, the x or the y?

A. Up    B. Down

11. What is the Horizontal Shift for the cubic function  $y = -\frac{1}{2}(x + 5)^3 - 1$ ? End behavior?

5 left    odd degree; neg ∴ ↑ ↓

12. What part of the function  $y = -\frac{1}{2}(x + 5)^3 - 1$  tells you that it is a cubic function?

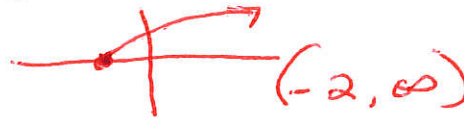
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13. The domain for  $y = \frac{2}{5}(x + 3)^2 - 1$  is  $[-3, \infty)$ . Is this determined by x-values or y-values?

x values

14. What is the Horizontal Shift for  $y = \sqrt{x + 2}$ ? So what is the domain of this function? (Think: Can you take the square root of a negative number and get a real solution?)

2 left



15. What is the Vertex for  $y = (x + 7)^2 + 3$ ?

$(-7, 3)$

16. What is the Vertical Shift for  $y = -3(x + 2)^3 + 1$ ?

up 1

Will it be thinner or fatter than its parent function?

Thinner

17. What is the direction for  $y = -3(x + 2)^3 + 1$ ?

A. Up

B. Down



18. Describe the symmetry for the function  $y = -x^3 + 5x^0$

neither

A. Even, symmetric with respect to the y-axis.

B. Odd, symmetric with respect to the origin.

C. Neither

19. Describe the symmetry for the function  $y = -x^2 + 1$

even

A. Even, symmetric with respect to the y-axis.

B. Odd, symmetric with respect to the origin.

C. Neither

20. Sketch and label 3 points on the graph of  $y = -(x + 6)^2 - 5$ ?

x	y
-1	1
0	0
1	1

x'	y'
-7	-6
-6	-5
-5	-6

$x - 6, -1y - 5$