

Parent Functions Activity

Name: _____

Date: _____

1. Which of the following is always true for all functions?
- I. For every x there is only one y .
 - II. For every y there is only one x .
 - III. The domain is the set of real numbers.
- A. I only B. II only
C. I and III only D. II and III only

2. Which of the following equations does *not* represent a function?
- A. $x^2 = 7 + y$
B. $(x - 2)^2 + (y + 1)^2 = 4$
C. $y = x + 6$
D. $|x| + y = 0$

3. This equation represents what type of function?
- $$y = |x - 4| + 2$$
- A. linear B. quadratic
C. exponential D. absolute value

4. This equation represents what type of function?
- $$y = 3x^2 - 5$$
- A. quadratic B. exponential
C. absolute value D. cubic

5. This equation represents what type of function?

$$y = 4^{x+1}$$

- A. linear B. exponential
C. absolute value D. cubic

6. Which of the following is a quadratic function?
- A. $f(x) = 3x^4 - 2x^2 + 7$
B. $f(x) = 3x - 5$
C. $f(x) = 2x^2 - 3x + 6$
D. $f(x) = 3$

7. State the domain and range of the function $y = 2^x$
- A. $x \in \mathbb{R}$ and $y > 0$ B. $x \in \mathbb{R}$ and $y \in \mathbb{R}$
C. $x > 0$ and $y \in \mathbb{R}$ D. $x > 0$ and $y > 0$

8. Let $f(x) = \sqrt{x}$ and $g(x) = \sqrt{x} + 4$. Which of the following statements is true about the graphs of the functions?
- A. $g(x)$ is $f(x)$ translated 4 units to the left
B. $g(x)$ is $f(x)$ translated 4 units to the right
C. $g(x)$ has the same domain as $f(x)$
D. $g(x)$ has the same range as $f(x)$

9. Given:

- a. $y = x$
- b. $y = |x|$
- c. $y = x^2$
- d. $y = \sqrt{x}$
- e. $y = a^x$, where $a > 0$ and a is not equal to 1
- f. $y = \log_a x$
- g. $y = \frac{1}{x}$, x is not equal to 0

How many of these functions have the set of all real numbers as a domain?

- A. 1 B. 2 C. 3 D. 4

10. To slide the graph of the equation $y = 3^x$ two units right, the equation is altered. What is the new equation?

- A. $y = 3^x - 2$ B. $y = 3^x + 2$
C. $y = 3^{x-2}$ D. $y = 3^{x+2} + 2$

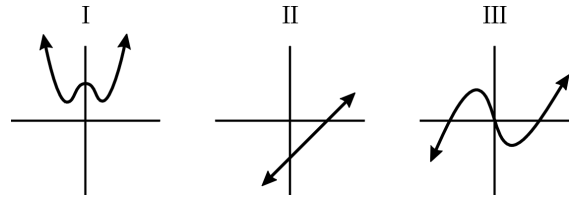
11. Given:

- a. $y = x$
- b. $y = |x|$
- c. $y = x^2$
- d. $y = \sqrt{x}$
- e. $y = a^x$, where $a > 0$ and a is not equal to 1
- f. $y = \log_a x$
- g. $y = \frac{1}{x}$, x is not equal to 0

How many of these functions are undefined when $x = 0$?

- A. 1 B. 2 C. 3 D. 4

12. Of the three functions shown, which are neither odd nor even?



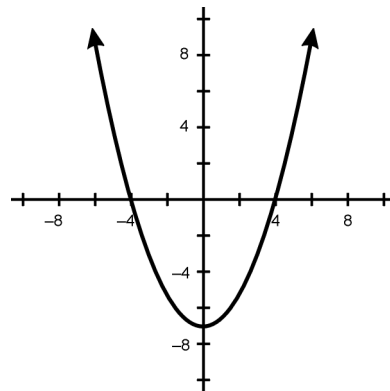
- A. I only B. II only
C. III only D. II and III

13. What type of function has the possibility of no x -intercepts?

- I. linear
- II. quadratic
- III. absolute value

- A. I only B. III only
C. I and II only D. I, II, and III

14. Given the graph of $g(x) = f(x) - 7$. What is the name for the parent function $f(x)$?



- A. linear B. exponential
C. square root D. quadratic

15. Which function does *not* have $y = x^2$ as its parent function?

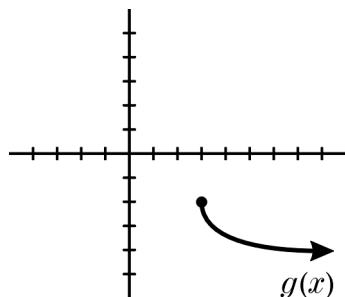
- A. $4y - 2x^2 + 5 = 0$
- B. $y = \left(\frac{x}{2}\right)^2 - 4$
- C. $y = \frac{1}{3}x^2 - 7$
- D. $(y + 3)^2 = (x - 2)^2$

16. Let $f(x) = \frac{1}{x}$ and $g(x) = \frac{1}{(x + 3)}$.

Describe the transformation from $f(x)$ to $g(x)$.

- A. translated 3 units to the right
- B. translated 3 units up
- C. translated 3 units to the left
- D. translated 3 units down

17.



The function $g(x)$ is a transformation of $f(x) = \sqrt{x}$. According to the graph above, $g(x) =$

- A. $f(-x) - 2$
- B. $-f(x) - 2$
- C. $f(-x - 3) - 2$
- D. $-f(x - 3) - 2$

18. Consider the graph of $y = -3|x|$. What will be the effect on the graph if -3 is replaced with 3 ?

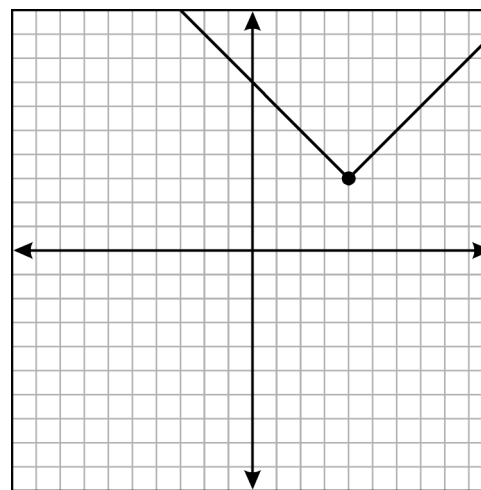
- A. a flip over the x -axis
- B. a horizontal shift of 1 unit to the left
- C. a vertical shift
- D. no change

19. Let $f(x) = \sqrt{x}$, $g(x) = 2\sqrt{x - 4} + 6$. Describe $g(x)$ in terms of the parent function, $f(x)$.

$g(x)$ is $f(x)$:

- A. vertical shrink, translated left 4 and up 6
- B. vertical stretch, translated right 4 and up 6
- C. horizontal stretch, translated right 6 and down 4
- D. horizontal shrink, translated right 4 and up 6

20. Find the equation of the function which results from translating (shifting) the graph of the function shown down 2 units and left 1 unit.



- A. $f(x) = |x - 2| + 3$
- B. $f(x) = |x - 1| + 1$
- C. $f(x) = |x - 3| + 1$
- D. $f(x) = |x + 1| - 2$

Parent Functions Activity 04/11/2014

1.
Answer: A
Objective: F.IF.01
2.
Answer: B
Objective: F.IF.01
3.
Answer: D
Objective: F.IF.01
4.
Answer: A
Objective: F.IF.01
5.
Answer: B
Objective: F.IF.01
6.
Answer: C
Objective: F.IF.01
7.
Answer: A
Objective: F.IF.01
8.
Answer: C
Objective: F.BF.03
9.
Answer: D
Objective: F.IF.01
10.
Answer: C
Objective: F.BF.03
11.
Answer: B
Objective: F.IF.01
12.
Answer: B
Objective: F.IF.04
13.
Answer: D
Objective: F.IF.04

14.
Answer: D
Objective: F.BF.03
15.
Answer: D
Objective: F.BF.03
16.
Answer: C
Objective: F.BF.03
17.
Answer: D
Objective: F.BF.03
18.
Answer: A
Objective: F.BF.03
19.
Answer: B
Objective: F.BF.03
20.
Answer: C
Objective: F.BF.03