

Quizizz

exponential transformations

Name : _____

Class : _____

Date : _____

1. What kind of shift happens with this function?

$$f(x) = 3^x - 4$$

- a) 4 points up
- b) 4 points to the left
- c) 4 points to the right
- d) 4 points down

2. What kind of shift is represented?

$$f(x) = 2^{x-1}$$

- a) up 1 unit
- b) left 1 unit
- c) right 1 unit
- d) down 1 unit

3. Does this function stretch or shrink?

$$f(x) = 4\left(\frac{1}{2}\right)^x$$

- a) stretch
- b) shrink

4. What transformations occur to $f(x)=5^x$?

$$f(x) = 5^{x-3} + 2$$

- a) translate right 3, up 2
- b) translate left 3, up 2
- c) translate left 3, down 2
- d) translate right 3, down 2

5. What transformation best describes the function?

$$f(x) = -3^x$$

- a) stretch
- b) shrink
- c) reflection
- d) shift down

- 6.

Describe the transformations of

$$y = 7^x \text{ to } y = -(7)^x + 2.$$

- a) It is vertically stretched and translated up.
- b) It is reflected and translated up.
- c) It is vertically compressed and translated up.
- d) It is reflected and translated left.

7.

Compare the graph of $g(x) = 6x^2$ with the graph of $f(x) = x^2$. Which of the following statements is true?

- a) $g(x)$ is vertically stretched.
- b) $g(x)$ is translated up.
- c) $g(x)$ is vertically compressed.
- d) $g(x)$ is reflected.

8. What is the transformation?

$$y = \left(\frac{1}{3}\right)^{x-1}$$

- a) Vertical Translation up 1
- b) Vertical Translation down 1
- c) Horizontal Translation left 1
- d) Horizontal Translation right 1

9. What is the transformation?

$$y = 3^x + 2$$

- a) Vertical Translation up 2
- b) Vertical Translation down 2
- c) Horizontal Translation left 2
- d) Horizontal Translation right 2

10. What is the transformation?

$$y = 2^{x+1} - 2$$

- a) Vertical Translation up 2 and Horizontal translation right 1
- b) Vertical Translation down 2 and Horizontal Translation left 1
- c) Horizontal Translation left 2 and Vertical Translation up 1
- d) Horizontal Translation right 2 and Vertical Translation down 1

11. What is the transformation?

$$y = -2^x$$

- a) Horizontal Translation left 2
- b) Vertical Translation down 2
- c) None
- d) Reflection across the HA

12. Compare $f(x) = 3^x - 4$ with the basic function $g(x) = 3^x$

- a) 4 units up
- b) 4 units to the left
- c) 4 units to the right
- d) 4 units down

13. Given $g(x)=5^x$

Write a function that is reflected over the line $y=0$ and translated 4 units to the right.

a) $f(x) = -5^{x-4}$

b) $f(x) = -5^{x+4}$

c) $f(x) = 5^{(x-4)}$

d) $f(x) = 5^{-(x-4)}$

14. Given $g(x)=(1/2)^x$

Write a function that is reflected over the line $y=0$ and translated 4 units up.

a) $f(x) = -(1/2)^{x+4}$

b) $f(x) = -(1/2)^{x+4}$

c) $f(x) = (1/2)^{x-4}$

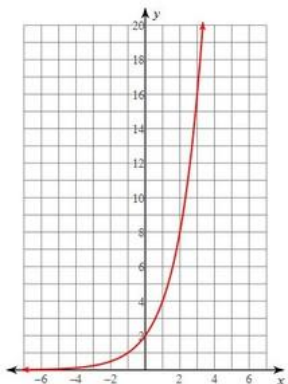
d) $f(x) = -(1/2)^{x+4}$

15. Given $f(x)=5^x$ write a function that is reflected over the vertical line $x=0$

a) $g(x) = -5^x$

b) $h(x) = 5^{-x}$

16. Which equation matches the graph?



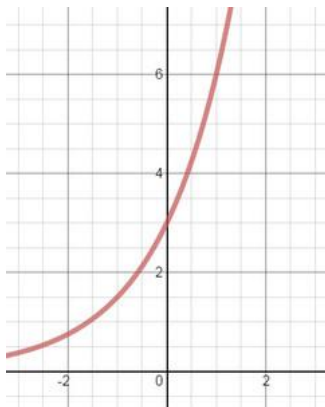
a) $y=2(2)^x$

b) $y=2(1/2)^x$

c) $y=2^x$

d) $y=1/2(2)^x$

17. What is the equation that represents the exponential function in the image below?



a) $y=3(1/2)^x$

b) $y=3(2)^x$

c) $y=(2)^x$

d) $y=2(3)^x$

18. Write the equation that represents the table below:

x	-2	-1	0	1
y	16	8	4	2

a) $y=1/2(4)^x$

b) $y=2(4)^x$

c) $y=4(2)^x$

d) $y=4(1/2)^x$

19. When do we have growth?

$f(x) = (a)(b^x)$

a) $a < 1$

b) $b > 1$

c) $0 < b < 1$

d) $a > 1$

20. Which of the equations below represent this table?

x	-2	-1	0	1	2
y	4	12	36	108	324

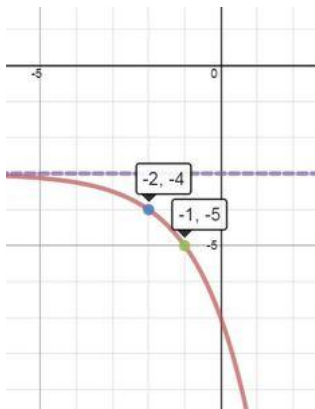
a) $y=3 \cdot (36)^x$

b) $y=36 \cdot (3)^x$

c) $y=3 \cdot (\frac{1}{3})^x$

d) $y=36 \cdot (\frac{1}{3})^x$

21. Which equation matches the graph?



a) $-2^{x+2}-3$

b) $2^{x+3}-2$

c) $-2^{x-2}-3$

d) $-2^{x+1}-2$

22. Which function represents the table of values?

x	y
0	1
1	4
2	16
3	64

a) $f(x) = 4x$

c) $f(x) = 4^x$

b) $f(x) = x^3$

d) $f(x) = 4^{x-1}$

Answer Key

1. d
2. c
3. a
4. a
5. c
6. b
7. a
8. d
9. a
10. b
11. d
12. d
13. a
14. d
15. b
16. a
17. b
18. d
19. b
20. b
21. a
22. c

