

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## EXPONENTIAL FUNCTIONS PRACTICE

### A. FILL IN THE BLANK

Greater than 1      left      Parenthesis      stretch      up  
Between 0 and 1      shrink      right      down      reflection

1. To determine if a function is growth or decay look at the number inside the \_\_\_\_\_.
2. If the number is \_\_\_\_\_ it is a growth function.
3. If the number is \_\_\_\_\_ it is a decay function.
4. To determine if a function is a \_\_\_\_\_ see if the number in front is greater than 1
5. To determine if a function is a \_\_\_\_\_ see if the number in front is between 0 and 1
6. If there is a negative in front of the equation then there is a \_\_\_\_\_.
7. If there is + in the exponent then there is a \_\_\_\_\_ shift.
8. If there is - in the exponent then there is a \_\_\_\_\_ shift.
9.  $f(x) = 3(2)^{x+1} - 3$  moves \_\_\_\_\_ by 3
10.  $f(x) = 3\left(\frac{1}{2}\right)^{x-1} + 2$  moves \_\_\_\_\_ by 2

### B. Analyze the following functions

11. $y = 3\left(\frac{1}{2}\right)^{x-3} + 1$	12. $y = -2(4)^{x+2} - 3$
Stretch or Shrink? _____	Stretch or Shrink? _____
By how much? _____	By how much? _____
Growth or Decay? _____	Growth or Decay? _____
Reflection or no Reflection? _____	Reflection or no Reflection? _____
Horizontal Shift? _____	Horizontal Shift? _____
Vertical Shift? _____	Vertical Shift? _____
Asymptote? _____	Asymptote? _____

13.  $y = -2\left(\frac{5}{2}\right)^x - 5$

Stretch or Shrink? \_\_\_\_\_

By how much? \_\_\_\_\_

Growth or Decay? \_\_\_\_\_

Reflection or no Reflection? \_\_\_\_\_

Horizontal Shift? \_\_\_\_\_

Vertical Shift? \_\_\_\_\_

Asymptote? \_\_\_\_\_

14.  $y = \frac{1}{3}(4)^{x+1}$

Stretch or Shrink? \_\_\_\_\_

By how much? \_\_\_\_\_

Growth or Decay? \_\_\_\_\_

Reflection or no Reflection? \_\_\_\_\_

Horizontal Shift? \_\_\_\_\_

Vertical Shift? \_\_\_\_\_

Asymptote? \_\_\_\_\_

15.  $y = \frac{1}{4}(6)^{x-1} - 3$

Stretch or Shrink? \_\_\_\_\_

By how much? \_\_\_\_\_

Growth or Decay? \_\_\_\_\_

Reflection or no Reflection? \_\_\_\_\_

Horizontal Shift? \_\_\_\_\_

Vertical Shift? \_\_\_\_\_

Asymptote? \_\_\_\_\_

16.  $y = -4\left(\frac{2}{3}\right)^x + 5$

Stretch or Shrink? \_\_\_\_\_

By how much? \_\_\_\_\_

Growth or Decay? \_\_\_\_\_

Reflection or no Reflection? \_\_\_\_\_

Horizontal Shift? \_\_\_\_\_

Vertical Shift? \_\_\_\_\_

Asymptote? \_\_\_\_\_

17.  $y = \frac{1}{2}\left(\frac{3}{4}\right)^{x-7}$

Stretch or Shrink? \_\_\_\_\_

By how much? \_\_\_\_\_

Growth or Decay? \_\_\_\_\_

Reflection or no Reflection? \_\_\_\_\_

Horizontal Shift? \_\_\_\_\_

Vertical Shift? \_\_\_\_\_

Asymptote? \_\_\_\_\_

18.  $y = -(4)^x + 1$

Stretch or Shrink? \_\_\_\_\_

By how much? \_\_\_\_\_

Growth or Decay? \_\_\_\_\_

Reflection or no Reflection? \_\_\_\_\_

Horizontal Shift? \_\_\_\_\_

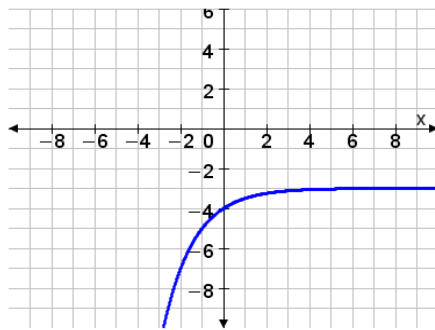
Vertical Shift? \_\_\_\_\_

Asymptote? \_\_\_\_\_

C. Answer the questions given the graphs below

19. Which of the following could be the equation for the graph shown?

- A.  $f(x) = -\left(\frac{1}{2}\right)^{x-3}$
- B.  $f(x) = \left(\frac{1}{2}\right)^x - 3$
- C.  $f(x) = -(2)^x - 3$
- D.  $f(x) = -\left(\frac{1}{2}\right)^x - 3$

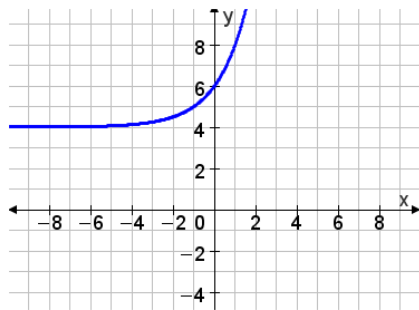


20. Domain:

21. Range:

22. Which of the following could be the equation for the graph shown?

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

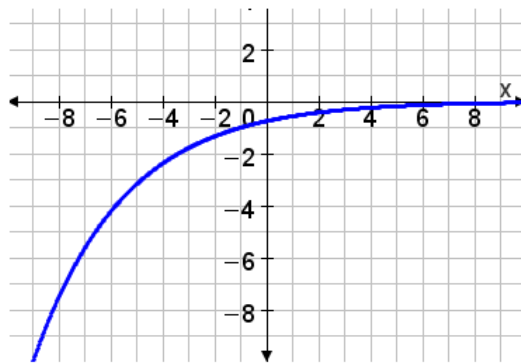


23. Domain:

24. Range:

25. Which of the following could be the equation for the graph shown?

- A.  $f(x) = -\left(\frac{3}{4}\right)^{x+1}$
- B.  $f(x) = -\left(\frac{3}{4}\right)^x + 1$
- C.  $f(x) = -\left(\frac{4}{3}\right)^x$
- D.  $f(x) = \left(\frac{3}{4}\right)^{x+1}$

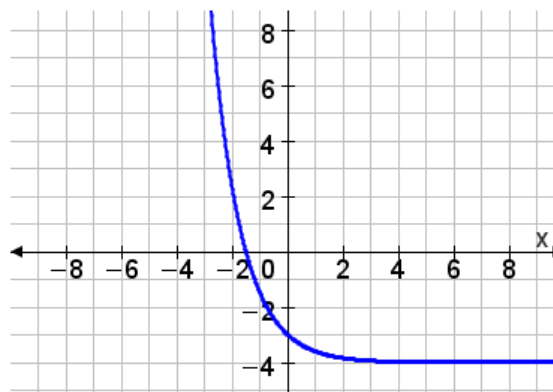


26. Domain:

27. Range

28. Which of the following could be the equation for the graph shown?

- A.  $f(x) = \left(\frac{5}{2}\right)^x - 4$
- B.  $f(x) = \left(\frac{2}{5}\right)^x - 4$
- C.  $f(x) = -\left(\frac{2}{5}\right)^x - 4$
- D.  $f(x) = -\left(\frac{5}{2}\right)^x - 4$



29. Domain:

30. Range:

