

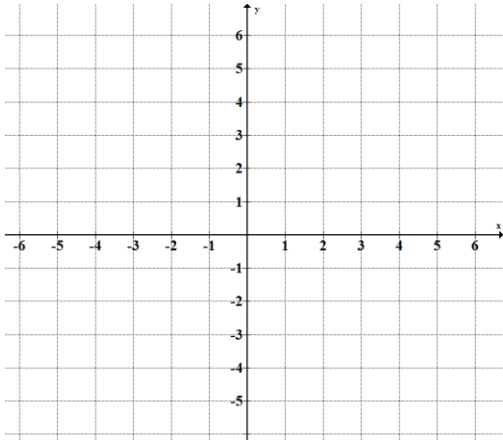
**PAP Algebra 2**  
**Exponential & Log Test Review**

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

**Exponential Functions & Key Attributes**

**Given the following functions: graph and identify the key attributes.**

1.  $y = (2)^x + 1$

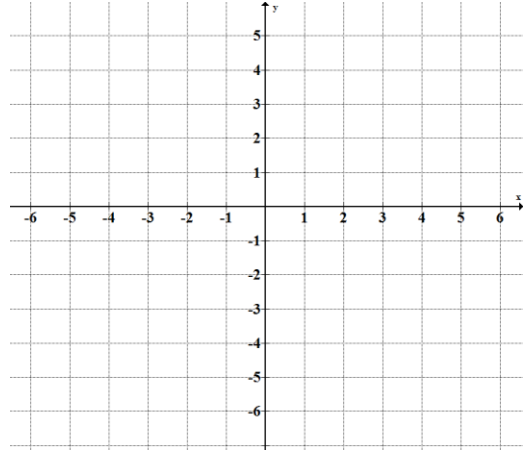


Asymptote:

Domain:

Range:

2.  $y = -2(3)^x$



Asymptote:

Domain:

Range:

**Identify the key attributes given the following functions:**

3.  $y = -4\left(\frac{1}{2}\right)^x - 6$

Transformations:

Critical Point:

Asymptote:

Domain:

Range:

4.  $y = 3^{x+5} - 4$

Transformations:

Critical Point:

Asymptote:

Domain:

Range:

5.  $y = -\frac{1}{2}(2)^{x-3} + 1$

Transformations:

Critical Point:

Asymptote:

Domain:

Range:

**Apply the following transformations to the following function to write the new function and the new key attributes for the following functions:**

6.  $y = \left(\frac{1}{4}\right)^{x-4} + 6$

Transformations:

**Left 5, Down 2**

New Equation:

Critical Point:

Asymptote:

Domain:

Range:

7.  $y = 3(2)^{x+1} - 4$

Transformations:

**X-Axis Reflection, Right 2, Down 3**

New Equation:

Critical Point:

Asymptote:

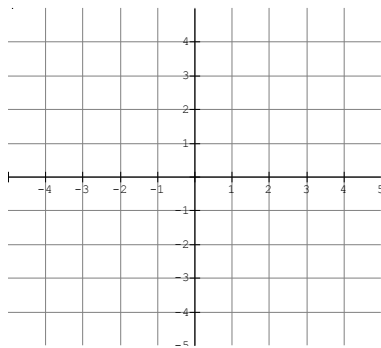
Domain:

Range:

***Log Functions & Key Attributes***

**Given the following functions: graph and identify the key attributes.**

8.  $y = -\log_2(x + 1) - 1$

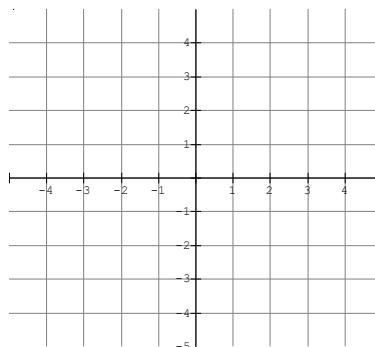


Asymptote:

Domain:

Range:

9.  $y = 3\log_3 x + 1$



Asymptote:

Domain:

Range:

**Identify the key attributes given the following functions:**

10.  $y = -2\log_2(x + 2)$

Transformations:

Critical Point:

Asymptote:

Domain:

Range:

11.  $y = -\log x + 2$

Transformations:

Critical Point:

Asymptote:

Domain:

Range:

12.  $y = \frac{1}{3}\log_4(x - 4) - 2$

Transformations:

Critical Point:

Asymptote:

Domain:

Range:

**Apply the following transformations to the following function to write the new function and the new key attributes for the following functions:**

13.  $y = \log(x)$

Transformations:

**Left 5, Up 3**

New Equation:

Critical Point:

Asymptote:

Domain:

Range:

14.  $y = \log(x) + 3$

Transformations:

**Right 4, Down 2**

New Equation:

Critical Point:

Asymptote:

Domain:

Range:

## **Converting & Inverses: Exponentials & Logs**

**Find  $f(x)^{-1}$  of the following functions:**

15.  $f(x) = 4^{x+2}$

18.  $f(x) = \log_3(x+2) - 1$

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

19.  $f(x) = \log x + 3$

17.  $f(x) = e^x - 2$

20.  $f(x) = \ln(x+2)$

## **Using Properties of Logs**

**Condense the following (make sure to simplify):**

21.  $5\log x - 4\log y$

24.  $3\log_2 8$

22.  $\log_5 4 + \frac{1}{3}\log_5 x$

25.  $\log_2 5 + \log_2 10 - \log_2 25$

23.  $2\log_7 4 - \log_7 x + \frac{2}{3}\log_7 8$