STATIONS ACTIVITY: LOGARITHMS AND EXPONENTIALS

Name: _____

Evaluate the following **without** a calculator.

1. $\ln e^{-4}$

   -4

2. $\log_2 32$

   5

3. $\log_3\left(\frac{1}{9}\right)$

   -2

4. $3^{4x-1} = 27$

   $x = 1$

5. $2\log_3(x-3) = 4$

   $x = 12$

6. $\log(x+2) + \log(x-1) = 1$

   $(x+2)(x-1) = 10^1$

   $x^2 + x - 2 = 10$

   $x^2 + x - 12 = 0$

   $(x+4)(x-3) = 0$

   $\boxed{x = 3}$ $x \neq -4$

   $\log(3+2) = \log 5$

   $\log(3-1) = \log 2$

   $\log(-4+2) = \log(-2)$ ×

Remember we had three different formulas for exponential expressions.

7. When do you use the formula $P = A_0(1 \pm r)^t$?

   population

   a. What does P represent?

      ending population

   b. What does A_0 represent?

      starting population

   c. What does r represent?

      rate (written as a decimal)

   d. What does t represent?

      time

8. When do you use the formula $P = A_0\left(1 \pm \frac{r}{n}\right)^{nt}$?

   interest compounded n times a year

   a. What does P represent?

      ending balance

   b. What does A_0 represent?

      initial balance

   c. What does r represent?

      rate (as a decimal)

   d. What does n represent?

      time per year being compounded

   e. What does t represent?

      time (in years)

9. When do you use the formula $A = Pe^{rt}$?

   interest compounded continuously

   a. What does A represent?

      ending balance

   b. What does P represent?

      initial balance

   c. What does r represent?

      rate

   d. What does t represent?

      time