Name:_____ Date:_____

Homework: Change of Base Formula and Solving Exponential Equations

Rewrite each of the following logarithms using the Change of Base Formula, then round to the nearest ten-thousandth.

1) $\log_4 5$

2) $\log_{19} \frac{1}{2}$

3) $\log_{18} 9$

Solve each of the following exponential equations:

4) $4e^{3x-1} + 10 = 92$

5) $2^{4x-7} = 3^{2x+18}$

6) $10^{5x+9} = 90^{x+5}$

7) $5(3)^{x-12} - 3 = 47$

8) Use the Change of Base Formula to prove the following equation true:

$$\ln 10 = \frac{1}{\log e}$$

9) Solve for t in the equation $A = Pe^{rt}$.

10) Is the following equation true or false? Justify your answer.

$$\text{If } b = \frac{1}{a}\log y, \text{ then } y = 10^{ab}.$$