

Pre-Calculus

Unit 3 Review II

1. Rewrite the following expression with positive exponents.

$$\left(\frac{3^{2x}}{5^{-4y}}\right)^{-6}$$

2. Which transformation(s) are present in the following function?

$$y = 2(3^{x+7}) + 5$$

3. Rewrite the following exponential expression in logarithmic form.

$$5^{x+5} = 625$$

4. Rewrite the following logarithmic expression into exponential form.

$$\ln(9) = x + 5$$

5. Evaluate the following expression.

$$\log_4 \frac{1}{64}$$

6. What graphical transformation does the three represent in the following function?

$$y = -3 \ln(x + 4)$$

7. Write the following expression into expanded form.

$$\ln\left(\frac{a^3 b^2}{c^5 d^4}\right)$$

8. Write the following expression into condensed form.

$$4 \ln a + 5 \ln b - 7 \ln c + 9 \ln d$$

9. Solve the following exponential equation.

$$5e^{4x} = 90$$

10. Solve the following logarithmic equation.

$$10 \ln(3x - 2) = 150$$