

Rewrite the following equations in the specified form.

$$\log_y 2z = 5 \text{ in exponential form:} \qquad y^5 = 2z$$

$$m^{4t} = x + 2 \text{ in logarithmic form:} \qquad \log_m (x + 2) = 4t$$

Write expressions for the following problems. You do NOT need to simplify your answer to a single number. SCORE: / 2 PTS

[a] You borrow \$25,000 for 7 years compounded continuously at an annual rate of 4.3%. How much do you owe at the end?

[b] You lend your friend \$4,100 for 3 years compounded monthly at an annual rate of 2.1%. How much does your friend owe you at the end?

$$4100\left(1+\frac{0.021}{12}\right)^{36}$$

Find the equation of the vertical asymptote of the graph of $f(x) = 3\ln(5-2x) + 1$. SCORE: ____/ 1 PTS

$$5 - 2x = 0$$

 $x = \frac{5}{2}$

SCORE: / 2 PTS

Evaluate the following logarithmic expressions. If a value is undefined/does not exist, write DNE.

SCORE: ____ / 5 PTS

$$\log_{10^{-6}} = -6$$
 $\log_{13} 1 = 0$ $\log_{3} \frac{1}{9} = -2$
 $e^{\ln 0} = 0$ $\log_{4} 64 = 3$

Use the One-to-One Property to solve $27^{x+2} = 9^{2x+5}$.

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

$$3^{3x+6} = 3^{4x+10}$$

$$3x+6 = 4x+10$$

$$x = -4$$

SCORE: ____ / 2 PTS

Use transformations to graph $f(x) = -\log_3(x-4) - 2$. You must show the result of transforming each significant point and feature as shown in lecture.

SCORE: ____ / 4 PTS

$$\begin{array}{c} \text{Reflect over x-Axb} \\ \text{SHIFT RIGHT 4} \\ \text{DOWN 2} \\ (1,0) \longrightarrow (1,0) \longrightarrow (5,0) \longrightarrow (5,-2) \\ (3,1) \quad (3,-1) \quad (7,-1) \quad (7,-3) \\ \text{x=0} \quad \text{x=0} \quad \text{x=4} \quad \text{x=4} \end{array}$$

A \ / 1 S

