NAME:



DATE:

6. ln e = 1

Expand. (Write as sum or diff of logs). (+2 pts each)

10.

 $\rho = \rho$

 $\log_{9}(3^{4} \cdot 2^{6})^{2}$

8 log = 3 + 12 log = 2

109 30.712

EXPONENTS AND LOGS: Corrective Assignment

 $\log 10,000 = 4$

 $10^{4} = 10,000$

9. $\log_6 6y\sqrt{wz}$

PROPERTIES

Evaluate (+2 pts each) 3 $\log_{\left(\frac{1}{2}\right)}\left(\frac{1}{8}\right)$ 1.

 $2. \quad \log_2 \frac{1}{256} \quad \bigcirc \quad$ $\log_{\pi} 1$ 3.

Express in the exponential form (+2 pts each) 4. $\log_{13} 2197 = 3$

13 = 2197

Condense (Write as a single logarithm). (+2 pts each)

7. $\log_5 a + \frac{1}{3}\log_5 b$ 8. $\frac{1}{2}\ln x - 8\ln 7$ $\int \mathcal{N} \frac{\sqrt{X}}{-8} \qquad \log(6 + \log_{6}y + \frac{1}{2}\log_{6}w + \frac{1}{2}\log_{6}z)$ 1095 Q36

Evaluate to 3 decimal places. (+2 pts each)

11. \log_{22} / 921 12. $\ln 51$ 3.932 13. $\log_7 51$ <u>1.021</u>

Solve for the indicated variable. Round to three digits where applicable. (+4 pts each)

5.



For questions 16 – 19, solve for the indicated variable. Round to three digits where applicable. (+4 pts each)

17.
$$(\log(x-5) + \log x) = 1$$

 $(0 \quad 10$
 $10 \quad 10 \quad x = \frac{52}{(x^{3})^{-1}(x^{3})(x^{3})}$ $x = \frac{6 \cdot 53}{x}$
 $10 \quad 10 \quad x = \frac{52}{(x^{3})^{-1}(x^{3})}$ $x = \frac{6 \cdot 53}{x}$
 $x = \frac{6 \cdot 53}{x}$
 $x = \frac{6 \cdot 53}{x}$
 $x = \frac{52 \cdot 53}{x}$
 $x = \frac{52 \cdot 53}{x}$
 $x = \frac{52 \cdot 65}{x}$
 $x = \frac{52 \cdot 67}{x}$
 $x = \frac{5$





26. Find how long you need to invest \$200 at 3.5% interest compounded quarterly for your investment to equal \$2500. (+4 points) **D** = 0 (1.17)

$$\begin{array}{l} 4t = 4t \left(1 + \frac{5}{2}\right) \\ 2500 = 200(1 + \frac{035}{12})^{4t} \\ 12.5 = (1.00875)^{4t} \\ \end{array}$$

27. Bean has a BBQ for his basketball team and starts his grill, which promptly heats up to about 350 °F. He then gets distracted by the hamburger dance and his gas grill runs out of propane. When Bean checks his grill 5 minutes after the propane ran out, the grill has cooled to 275 °F. Assume the outside temperature was 45 °F.

a. Use Newton's Law of Cooling to find k. (+4 points)

T(t) = T(s) + (To - To) e-kt

275=45+(350-45)e-K(5) .754098=e-5K In .754098=-5K

Y = 056446

b. How long will it take the grill to cool down to a safe temperature $(90^{\circ}F)?(+4 \text{ pts})$ -(\$C6446)t 90 = 45 + (350 - 45)e $\ln(.006557) = \ln e^{-(.056446)t}$ 89.06 min = t

28. Use the given parent functions to write the equations of the functions below.

