Secondary Math 3 Name_____

5-1 Defining and Evaluating Logarithms

Date_____ Period____

1) What is a logarithm?

Rewrite each equation in exponential form.

2) $\log_n m = -6$

3) $\log 243 = x$

Rewrite each equation in logarithmic form.

4) $20^2 = 400$

5) $e^y = z$

Evaluate each expression.

6) $\log_3 243$

7) $\log_3 \frac{1}{27}$

8) $\log_7 343$

9) $\log_{25} 5$

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

11) $\log_6 36$

12) $\log_4 64$

13) $\log_7 \frac{1}{49}$

14) $\log_3 27$

Approximate between what two integers each expression lies without using a calculator.

15) $\log_3 44$

16) $\log_6 64$

17) $\log 7$

18) $\ln 45$

Evaluate each expression without using a calculator. Explain your reasoning.

19) $\ln e^2$

20) $10^{\log 7}$

Exponential Functions Review

21) Daniel invests $4,650 in a retirement account with a fixed annual interest rate of 4% compounded continuously. What will the account balance be after 14 years?

22) Matt invests $2,028 in a retirement account with a fixed annual interest rate of 4% compounded semiannually. How long will it take for the account balance to reach $3,393.69?