

M314 - Algebra 2
Unit 11 Logs & Exponential Functions
Review for Test

Name _____

Teacher _____

Write each of the expressions as a single log.

1) $3 \log_{10} x - 2 \log_{10} y$

2) $2 \log_5 7 + \log_5 3$

3) $\log_5 14 - \log_5 2 + \log_5 6$

Expand each of the expressions.

4) $\log_6 4x^2$

5) $\log_3 \frac{a}{b^5}$

6) $\log_2 \frac{x}{y}$

Convert the following equations to exponential form.

7) $\log_7 49 = 2$

8) $\log_5 \frac{1}{25} = -2$

Convert the following equations to logarithmic form.

9) $36^{\frac{1}{2}} = 6$

10) $5^{-3} = \frac{1}{125}$

Simplify the following expressions and solve the following equations.

11) $x = \log 349$

12) $x = \log_2 9$

13) $\log_7 x = 3$

14) $x = \log_3 243$

15) $\log_4 x = -1$

16) $x = \log_2 513$

Find the values of the following expressions. Round to three decimal places.

17) $\log 20$

18) $\log_6 42$

19) $\log \sqrt{19}$

20) antilog 0.2425

21) $\log_2 11$

22) antilog 5487

Solve the equation for x. You must show work for full credit. Round to three decimal places. Refer to worksheet 8 and 9.

23) $34 = 8^x$

24) $6^x = 20$

25) $3000 = 100(5)^x$

26) $7^{2x} = 64$

27) $4000 = 1000 \left(1 + \frac{.05}{4} \right)^{4t}$

28) $5000 = 100(4)^t$

29) $5500 = 1000 \left(1 + \frac{.09}{12} \right)^{12t}$

Solve the following application problems. You must show work for full credit. You cannot use the finance menu on your calculator.

30) You want \$7200 after four years. Find the initial amount you should deposit in an account that pays 6.25% annual interest compounded quarterly.

Formula _____

Work

31) When you were born in 1986, a relative invested \$25,000 in an account for you. Suppose the investment grows at an average annual rate of 6% compounded annually. After how many years will the initial amount become one million dollars from this account?

Formula _____

Work

32) A person invested \$20,000 into an account with an average annual interest rate of 4.5% compounded annually. After how many years will with initial investment grow to \$500,000 (half a million dollars)?

Formula _____

Work

For problem 33 and 34, use the Finance Application on the TI-83+ calculator.

33) a) You buy a \$655,000 house. Your mortgage rate is 7.5% annual interest compounded monthly for 30 years. Find your monthly payments.

N = _____

FV = _____

I% = _____

P/Y = _____

PV = _____

C/Y = _____

PMT = _____

PMT: END

33) _____

b) Find the amount you are actually paying for this house at the end of the 30 years. Show work for full credit.

33b) _____

34) You want to have \$6000 at the end of six years. You deposit an initial amount into an account with 6.75% annual interest rate compounded quarterly. What initial amount should you deposit, so you have \$6000 at the end of the six years?

N = _____

FV = _____

I% = _____

P/Y = _____

PV = _____

C/Y = _____

PMT = _____

PMT: END

34) _____