

# Worksheet 6250

Algebra 2B

Review of Logarithms

Name \_\_\_\_\_

Per \_\_\_\_\_

Show your work, and round to three decimal places where necessary.

1) Rewrite each equation into either exponential or logarithmic form.

a)  $\log_6 36 = 2$

b)  $\log_{289} 17 = \frac{1}{2}$

c)  $12^2 = 144$

d)  $64^{\frac{1}{2}} = 8$

2) Rewrite each expression as a single logarithm.

a)  $\log 3 - \log 8$

b)  $\log 2 + \log 11 + \log 7$

c)  $4\log 3 - 3\log 4$

d)  $\frac{\log 6}{3}$

3) Find the value of each expression, rounded to nearest 3 dp.

a)  $\log_3 3.3$

b)  $\log_2 30$

c)  $\log_4 5$

4) Convert the log expression,  $\log_2 30$ , to one with only base 8.

5) Find the future value of a \$11,000 investment <sup>15 years later</sup> in a bank that pays 10% annual interest if

a) compounded twice a year

b) compounded continuously

6) Use log properties to solve each equation.

a)  $\log(-2a + 9) = \log(7 - 4a)$

b)  $\log x + \log 8 = 2$

c)  $-6\log_3(x - 3) = -24$

d)  $\log x + \log 7 = \log 37$

7) Use log properties to solve each equation. Show exact answers in terms of base 10 and to 3dp.

a)  $3^b = 17$

c)  $5 \cdot 18^{6x} = 26$

d)  $16^{n-7} + 5 = 24$