**Key**

# Sept. 22 Worksheet

1. Change each of the following equations from exponential to logarithm form, then solve for x.

$$b^x = y \rightarrow \log_b y = x$$

$7^x = 49$

~~5496~~

$\log_7 49 = x$

$x = 2$

$4^x = 64$

$\log_4 64 = x$

$x = 3$

$3^x = 81$

$\log_3 81 = x$

$x = 4$

$18^x = 5496$

$\log_{18} 5496 = x$

$x = 2.98$

2. Transform the following into its inverse, then solve for x.

$e^x = 16$

$\ln 16 = x$

$x = 2.77$

$e^x = 127$

$\ln 127 = x$

$x = 4.84$

$4(16)^x = 48$

$\log_{16} 12 = x$

$x = .896$

$6e^x - 24 = 18$

$\ln 7 = x$

$x = 1.95$

3. You deposit $1,500 into a savings account with a simple annual interest rate of 4%. How much interest will you earn in 3 years?

$180

4. A person borrows $5,000 for 6 months at a simple interest rate of 8% per year. How much interest will they pay?

$200

5. An investment earned $250 in simple interest over 2 years at an annual rate of 5%. What was the original principal amount?

$2,500

6. A loan of $3,000 accrues $360 in simple interest over a period of 2 years. What is the annual interest rate?

6%

7. What is the present value of a bond that will be worth $12,000 in 11 months, assuming a simple annual interest rate of 8%?

$11,180.25

or          either works

$11,180.12