

# This is in your packet!

## Warm-up Monday wk 4

1. Tell whether each function represents an exponential growth or decay:

a)  $f(x) = 7(0.34)^x$

b)  $f(x) = 6(4.5)^x$

c)  $f(x) = (5.1)^{-x}$

2. Larry has a choice between investing his money in an account that pays 4.27% interest compounded monthly or in an account that pays 4.263% interest compounded daily. If he plans to leave his money in the account for 7 years, which should he choose?

3. Write each in exponential form.

a)  $\log_2 x = 3$

b)  $\log_x 4 = 9$

c)  $\log_3 456 = x - 2$

4. Write each in logarithmic form.

a)  $5^2 = 25$

b)  $8^{\frac{1}{3}} = 2$

c)  $(x + 3)^2 = 45$

5. The population of Palomar is 34,780 and is expected to increase at a rate of 2.4% each year.

a) Write an expression for the projected population in Palomar after  $n$  years.

b) What will the population be in a decade?

6. Find the value of  $x$ . Round to the nearest hundredth, **if necessary**.

a)  $10^x = 382$

b)  $3 = \log_4 x$

c)  $x = \log_5 \frac{1}{125}$

7. In an experiment, bacteria are put into a petri dish and are allowed to grow. The number of bacteria in the dish after  $n$  hours is found to be  $45 \cdot 3^n$ .

a) How many bacteria were put into the dish at the beginning of the experiment?

b) How fast is the population of bacteria growing?

c) How many bacteria are in the dish after 7 hours?