Name _____ Hour _____

Unit 8 – Logs (Inverses, Application)

Find the inverse of the function.

1. $y = \log_4 x$

2. $y = \log 10x$

3. $y = \log(x - 2)$

4. $y = \log_5 x^2$

5. $y = \log_6(4x + 4)$

6. $y = \log_2(x + 5) - 9$

Name _____ Hour _____

7. a) Suppose that the number of bacteria in a lab dish at any time *t* hours after the start of an experiment is given by the function $B(t) = 500\,(10^{0.3t})$. Show how to use logarithms to find the time when there will be 10,000 bacteria in the lab dish.

b) Suppose that the value (**in millions of dollars**) of the Detroit Tigers baseball team at any time *t* years after 2006 is given by the function $V(t) = 450\,(10^{0.02t})$. Show how to use logarithms to find the time when that investment will be worth $1 billion.

c) Suppose that the amount of medicine (in mg) active in a patient's blood at any time *t* hours after an injection is given by the function $M(t) = 500\,(10^{-0.071t})$. Show how to use logarithms to find the time when only 25 mg of the medicine remain active.