## MORE PRACTICE: Evaluating Logarithms

Evaluate the following logarithms:

1. log 2

2. log 6.34 3. ln 2.7

4. In 4

5. log<sub>2</sub> 7 6. Log<sub>5</sub> 4 7. log<sub>4</sub> 2.4 8. Log<sub>2</sub> 8

Convert the logarithmic equation to an exponential equation

9. 
$$T = log_8 k$$

10. 
$$Q = \log P$$

11. 
$$4 = \ln x$$

Solve for x:

12. 
$$x + 1 = log_8 15$$

11. 
$$10^x = 6$$

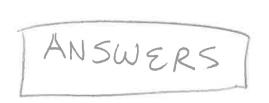
11. 
$$10^x = 6$$
 13.  $7.8 = e^x$ 

14. 
$$12 = 4^x$$

15. 
$$8 = \frac{1}{2} \cdot 5^x$$

15. 
$$8 = \frac{1}{2} \cdot 5^x$$
 16.  $7 \cdot 3^x + 4 = 11$ 

- 17. A boat has 5 barnacles on it. They number of barnacles increases by a factor of 1.5 every day.
- a) How many barnacles are on the boat in 1 week?
- b) How long until there are 200 barnacles?



## MORE PRACTICE: Evaluating Logarithms

## Evaluate the following logarithms:

$$6. \log_5 4$$

$$= \frac{\log 4}{\log 5}$$

$$= \frac{\log 7}{\log 2} = 2.807 = \frac{\log 4}{\log 5} = \frac{\log 2.4}{\log 4}$$

$$= 0.861$$
  $= 0.632$   
Convert the logarithmic equation to an exponential equation

9. 
$$T = log_8 k$$

9. 
$$I = log_8 \kappa$$

10. 
$$Q = \log P$$

11. 
$$4 = \ln x$$

 $=\frac{\log 8}{\log 2}=3$ 

$$x = e^4$$

## Solve for x:

12. 
$$x + 1 = log_8 15$$

$$X + 1 = \frac{\log 15}{\log 8} = 1.302$$

$$x + 1 = 1.302$$
 $x = 0.302$ 
 $14.12 = 4^{x}$ 

$$=\frac{\log 12}{\log 4}=1.792$$

11. 
$$10^x = 6$$

15. 
$$8 = \frac{1}{2} \cdot 5^x \cdot 2$$

13. 
$$7.8 = e^x$$

$$x = \log 106$$
  $x = \log 7.8$   
 $= \log 6$   $= \ln 7.8$   
 $= 0.778$   $= 2.054$   
 $15.8 = \frac{1}{2}.5^{x}.2$   $16.7.3^{x} + 4 = 11$ 

16. 
$$7 \cdot 3^x + 4 = 11$$

$$7.3^{x} = \frac{7}{3} \times \frac{1}{3} \times \frac{1}$$

$$= \frac{\log 12}{\log 4} = 1.792$$

$$= \frac{\log 16}{\log 5} = 1.723$$
17. A boat has 5 barnacles on it. They number of barnacles increases by a factor of

1.5 every day.

b) How long until there are 200 barnacles?

$$200 = 5(1.5)^{t}$$
  $40 = 1.5^{t}$ 

$$B = 5(1.5)^7 = 85.4 \text{ barnacles}$$