- 1. [5 points] For each of the statements below, circle "**True**" if the statement is *definitely* true. Otherwise, circle "**False**". You do not need to show any work for this problem.
  - a. [1 point] If a function has more than one zero, then the function is not invertible.

True

**b.** [1 point] If x > 1, then  $100x^{100000} > e^{0.0001x}$ .

True

False

False

**c**. [1 point] If  $h(t) = \ln(t)$  then  $h^{-1}(t) = \frac{1}{\ln(t)}$ .

True

False

d. [1 point] If a function is concave up, then the function is increasing.

True

False

**e.** [1 point] If f(x) and g(x) are both even functions, then the function f(g(x)) is also an even function.

True

False

**2.** [6 points] Solve each of the equations below. Show your work step-by-step and write the solutions in **exact form** in the answer blanks provided.

$$5e^{2t+7} = 3(4^t)$$

Answer:  $t = \underline{\hspace{1cm}}$ 

$$\log(w) + \log(w+3) = 1$$

Answer:  $w = \underline{\hspace{1cm}}$