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 False

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

True False

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

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.*

a. [3 points] $5e^{2t+7} = 3(4^t)$

Answer: $t =$ _____

b. [3 points] $\log(w) + \log(w+3) = 1$

Answer: $w =$ _____