

3. [10 points] Be sure to show your work on this problem. Parts **a.** and **b.** are not related.
- a. [5 points] Consider the function $P = f(t) = 4 - e^{2t+5}$. Find $f^{-1}(P)$. Find a horizontal asymptote of $f(t)$.

$$f^{-1}(P) = \underline{\hspace{10cm}}.$$

A horizontal asymptote of $f(t)$ is $\underline{\hspace{10cm}}$.

- b. [5 points] Find all solutions x to the equation

$$4 \cos(4x) = 1$$

on the interval $[-1, 2]$. Write your answer(s) in exact form. If there are no solutions, write “no solutions” in the blank and explain your answer.

$$x = \underline{\hspace{10cm}}.$$