10. [10 points]

    a. [5 points] Find all the values of $-4 \leq x \leq 20$ that satisfy the following equation. Find your answers algebraically. Your answer(s) must be in **exact form**. Show all your work.

$$2 - 6\sin\left(\frac{\pi}{8}x\right) = 4$$

$x =$_____

    b. [5 points] Let $w = F(s)$, where $F(s) = 4 + \ln(3^s + 1)$. Find a formula for $F^{-1}(w)$. Show all your work.

$F^{-1}(w) =$_____.