3. [13 points] Solve the following equations for the indicated variable. Your answers should be given in **exact** form. Show carefully **all** your work.

a. [4 points] $\log(x^5) = \pi$. Solve for x.

b. [4 points] $(\ln(w + 4))^3 = e$. Solve for w.

c. [5 points] $e^{-2p+7} = 10 \cdot 3^p$. Solve for p.