PROBLEM:

Solve the following complex-valued equations. Reduce the answers to a simple numerical form.

(a) Find all solutions of $z^6 = 1 - j$. Express your answers for z in $\boxed{\text{polar}}$ form. How many *different* solutions exist?

(b) The following equation depends on n and F_s. Whenever F_s is assigned a value, the equation must then be true for all n.

$$e^{-j(\pi/6)n} = e^{j6\pi n/F_s} \qquad \text{for all } n$$

Find all possible values for $F_s > 0$ for which the equation will be true.