1. The permittivity constant, ϵ_0, is $8.85 \times 10^{12} F/m$. The permeability constant, μ_0, is $1.26 \times 10^{-6} H/m$. The letter m, of course, is the unit "meters." The letter F is the symbol for the SI unit "Farad," and the H is for the SI unit, "Henry." You'll probably have to look up the definitions of these units and some relevant conversion factors. Convert

$$\sqrt{\frac{1}{\epsilon_0 \mu_0}}$$

to miles per hour.

2. In the case of the video of the water container, our calculation did not match the actual time to fill the container. Assume that *all of the problem* consisted in an incorrect measuring of the 16oz. in the timed filling of the measuring cup. What would the amout of water be that had run into the cup in 8.7 seconds?