17. A lossless, $Z_o = 50\Omega$ transmission line is $1.0\times10^6$ meters long with $\epsilon_r = 1$. Its far end is shorted. At $t = 0$, an ohmmeter is connected to the near end. **Give the ohmmeter readings** at each time below. You may assume that the ohmmeter applies a voltage to measure resistance.

(a) at time $t_{0-}$, ohmmeter reads: $\infty\Omega$, probes are not yet connected to the line

(b) at time $t_{0+}$, ohmmeter reads: $50\Omega$, the incident wave is just starting down the line

(c) at time $t = 2_{td+}$, ohmmeter reads: $0\Omega$, After the reflected wave arrives, the short is apparent

(d) at time $t = \infty$, ohmmeter reads: $0\Omega$