Quiz #4: Huston's lecture, Feb. 27, 2002

1. For an inductor L and capacitor C, which answer is correct?
   (a) For L, D***v*** lags ***i*** ; and for C, ***i*** leads D***v***.
   (b) For *L*, D*v* leads *i* ; and for *C*, *i* leads D*v*.
   (c) For L, D***v*** leads ***i*** ; and for C, ***i*** lags D***v***.
   (d) For L, D***v*** lags ***i*** ; and for C, ***i*** lags D***v***.
   (e) None of the above is correct.

   Use the phrase: "ELI the ICE man"

2. For a series *RLC* circuit, you are given that the impedance $Z = 15\ \Omega$ and that $R = 8.0\ \Omega$. If the rms voltage across R is $\Delta V_R = 7.0$ V, compute the rms voltage across the whole circuit, ΔV.

   (a) 7.0 V
   (b) 9.4 V
   (c) 11.7 V
   (d) 13.1 V
   (e) 14.4 V

   Given $\Delta V = I \cdot Z$.
   Note: $I = \Delta V_R / R$
   $\Delta V = (\Delta V_R / R) \cdot Z = (7.0\text{V})(15\Omega)/8.0\Omega = 13.1$ V