

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

1. For an inductor L and capacitor C , which answer is correct?
- (a) For L , Dv lags i ; and for C , i leads Dv .
 - (b) For L , Dv lags i ; and for C , i lags Dv .
 - (c) For L , Dv leads i ; and for C , i lags Dv .
 - (d) For L , Dv leads i ; and for C , i leads Dv .**
 - (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 $R = 9.0 \Omega$. If the rms voltage across R is $\Delta V_R = 7.0 \text{ V}$, 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 $\Delta V = IZ$.

Note: $I = \Delta V_R / R$

$$\Delta V = (\Delta V_R / R) \cdot Z = (7.0\text{V})(15\Omega) / 9.0\Omega = 11.7 \text{ V}$$