

## Selected Answers to HW #2

Remember to explain all answers in your solutions. You will not receive credit for merely repeating an answer given here. If an answer is not provided below, it is either because the solution is trivial or because disclosure of the answer would give away too much of the solution.

Although some effort has been made to ensure that there are no errors in the answers below, some might nevertheless appear. Please let me know as soon as possible if you discover an apparent error.

1.
  - a.  $f = 7.0$  MHz
  - b.  $\lambda = 29$  m
  - c. [answer not given]
  - d.  $I_0^- = 2.6e^{j0.75\pi}$   $\mu$ A
  - e. load voltage is  $0.90e^{-j1.41}$  mV or (equivalently)  $0.90 \angle -81^\circ$  mV
  - f. total voltage at  $z = -20$  m is  $0.78e^{j2.72}$  mV or (equivalently)  $0.78 \angle 156^\circ$  mV
  - g. phase shift is  $123^\circ$  or  $-237^\circ$
2.  $V(-2) = 0.097 \angle 175^\circ$  V  
 $V_{in} = V(-10) = 0.12 \angle -133^\circ$  V  
 $V_L = V(0) = 0.12 \angle 47^\circ$  V [time-domain functions not given]
3. [proof]
4.  $\tilde{V} = 5e^{j2.75} e^{-0.0028x} e^{-j0.209x} = (5 \angle 158^\circ) e^{-0.0028x} e^{-j0.209x}$  V
5.  $Z_L = 120 \Omega$  or  $750 \Omega$