VE215 Quiz #5

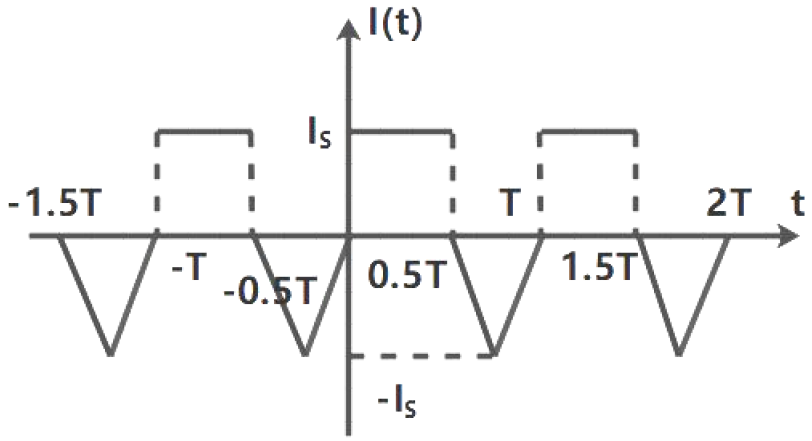
Chapter 10 to Chapter 11 are covered in this quiz.

Problem #1

Please calculate the RMS values of the following signals:

(1) $\mathbf{V_0(t) = 1 + 2\sin(100t + 30°)}$ V

(2) $\mathbf{I_0(t)}$ (See the graph below)



Problem #2

For a linear circuit, suppose the Thevenin's equivalent voltage is $\mathbf{V_{TH}}$ and the equivalent impedance is $\mathbf{Z_{eq} = R_{eq} + jX_{eq}}$, If we'd like to connect another impedance $\mathbf{Z_L}$ as the load, please derive the expression of $\mathbf{Z_L}$ that will absorb the maximum power and the expression of that maximum power if

(1) $\mathbf{R_{eq}} > 0$

(2) $\mathbf{R_{eq}} < 0$