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The Ohio State University
Department of Electrical Engineering

EE 341 Energy Conversion
Home work Set # 3
1. Solve Problem 1-5 (text, page 48)

2. Write a Matlab program and solve Problem 2-2 (page 133). Attach your Matlab program as an appendix. Give your solution on separate sheets.

3. **Special Problem:**

   Consider a single phase transformer rated 1.2kV/120V, 72kVA. Assume the low voltage side is short circuited and the voltage, current and power measured on the high side are:

   \[
   \begin{array}{|c|c|c|}
   \hline
   V & 20 \text{ V} & \hline
   I & 60 \text{ A} & \hline
   P & 36 \text{ W} & \hline
   \end{array}
   \]

   a) Determine the short circuit impedance referred to the low voltage side. b) Per unit Impedance from high and low voltage sides. **You must give all your calculation steps.**