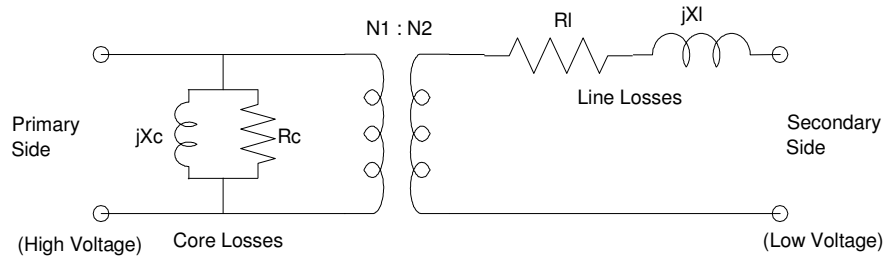


# ECE 111: Homework 15

Week #15 - ECE 331 Energy Conversion. Due Deember 14th

Please submit as a Word or pdf file to BlackBoard or email to Jacob\_Glower@yahoo.com with header ECE 111 HW#15  
www.BisonAcademy.com

1) Determine the circuit model for a 13.2V : 240V transformer is tested with the following test results:



Transformer Model

	V	Power	pf
Open-Circuit Test	$V_1 = 9.6\text{kV}$	85 W	0.06
Short-Circuit Test	$V_2 = 24\text{V}$	15 W	0.97

For the utility grid on the back of the page....

2) Convert the voltages and impeances to the 120V node (right side)

3) Determine the voltages at each node

4) Determine the efficiency of this system

- Ignoring the core losses
  - Assumes a large number of customers share these losses
- Including the core losses
  - Assumes a single customer

