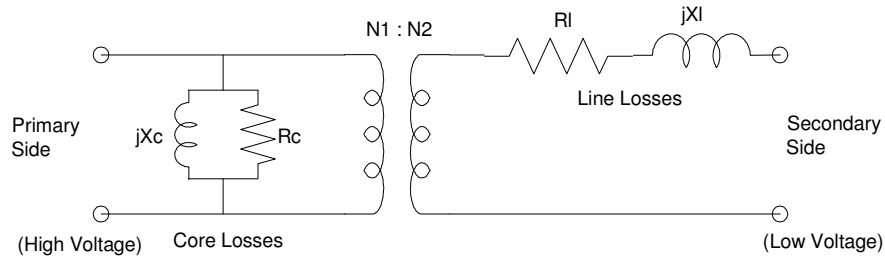


# ECE 111: Homework 15

Week #15 - ECE 331 Energy Conversion. Due 11am, Tuesday December 6th

1) Determine the circuit model for a 9.6kV : 240V transformer is tested with the following test results:



Transformer Model

	V	Power	pf
Open-Circuit Test	$V_1 = 13.2\text{kV}$	75 W	0.02
Short-Circuit Test	$V_2 = 24\text{V}$	12 W	0.98

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

2) Convert the voltages and impedances 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

