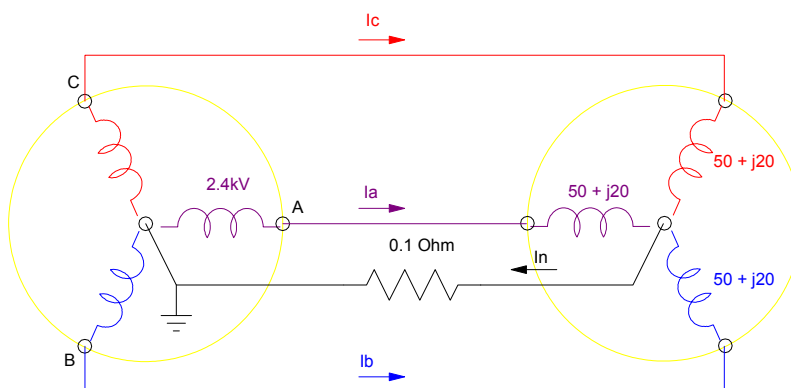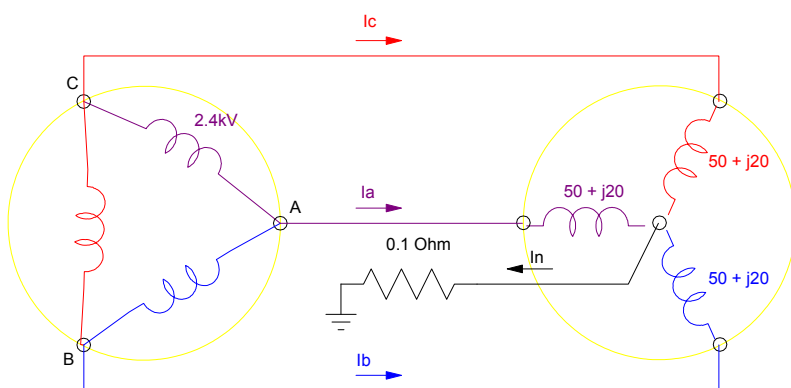# ECE 331 - Homework #5

Delta-Y Connetctions, Unbalanced Loads
Due Monday, February 24th, 4PM
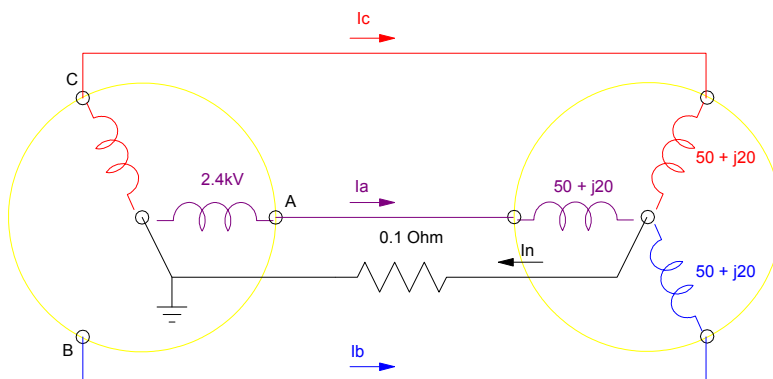
1) A 3-phase transformer in Y configuration drives a 3-phase balanced load in Y configuration. Determine the currents Ia, Ib, Ic an the current on the neutral line, In. Assume the line-to-neutral voltage for all three transformers is 2.4kV rms. $\{V_a, V_b, V_c\} = \{2.4kV\angle 0^0, 2.4kV\angle -120^0, 2.4kV\angle -240^0, \}$
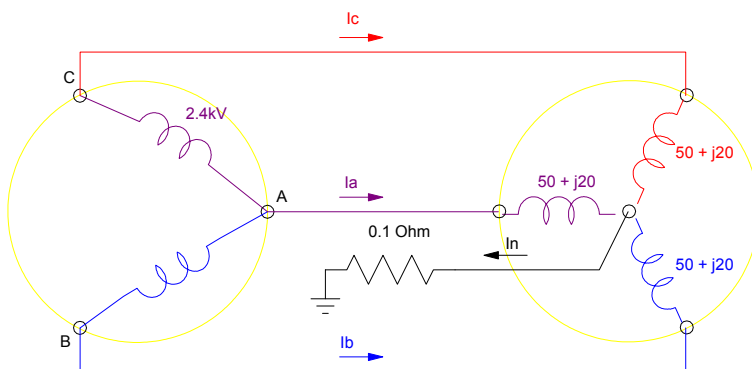

2) A 3-phase transformer in Delta configuration drives a 3-phase balanced load in Y configuration. Determine the currents Ia, Ib, Ic an the current on the neutral line, In. Assume the line-to-line voltage at the transformer is 2.4kV.

3) A 3-phase transformer in Y configuration drives a 3-phase balanced load in Y configuration. Assume phase B transformer is removed. Determine the currents Ia, Ib, Ic an the current on the neutral line, In. Assume the line-to-neutral voltage of each transformer is 2.4kV.

4) A 3-phase transformer in Delta configuration drives a 3-phase balanced load in Y configuration. Assume the phase BC transformer is removed. Determine the currents Ia, Ib, Ic an the current on the neutral line, In. Assume the line-to-line voltage of each transformer is 2.4kV.

5) A 3-phase transformer in Delta configuration drives a 3-phase unbalanced load in Y configuration. Determine the currents Ia, Ib, Ic an the current on the neutral line, In. Assume the line-to-line voltage at the transformer is 2.4kV.