

ENEL 487

Practice Set 2

The following questions are based on the 6th edition of “Power System Analysis and Design” by Glover. From Chapter 3 of the book, please attempt the following problems:

Topic 3 (Transformers)

- 3.9
- 3.10
- 3.11: To calculate the transformer efficiency, use $\eta = \frac{\text{Power delivered to the load}}{\text{Power input to the txfr}} = \frac{\text{Power delivered to the load}}{\text{Power delivered to the load} + \text{Losses in the transformer}}$ where losses in the transformer are I^2R losses in the winding resistance and G_c when the transformer is operating at the given conditions. (Hint: One of these two loss values is provided in the short circuit or open circuit test!)

Topic 4 (Per Unit)

- 3.23: You can assume that there is no phase shift associated with the transformers.
- 3.38: You are not required to know transformer phase shifts. You can ignore the transformer phase shift portion of this question (parts b and c)
- 3.49