



DEPARTMENT OF ELECTRICAL ENGINEERING

ENEE231: Network Analysis I

Final Exam

Date: 16 July 2013 Time: 2 pm – 4.30pm – 150 minutes

Calculators must not be used to store text and/or formulae nor be capable of communication.

Invigilators may require calculators to be reset.

Instructors: Mr. Hakam Shehadeh & Mr. Ashraf Al-Rimawi

Question One [10%]

Find V_x using **Nodal Analysis** only.

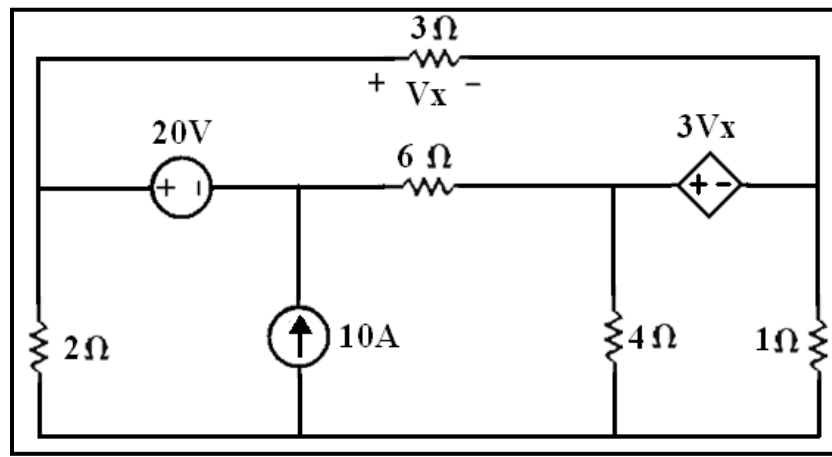


Figure Q1

Question Two [20%]

For the following circuit shown in figure Q2. Find V_x

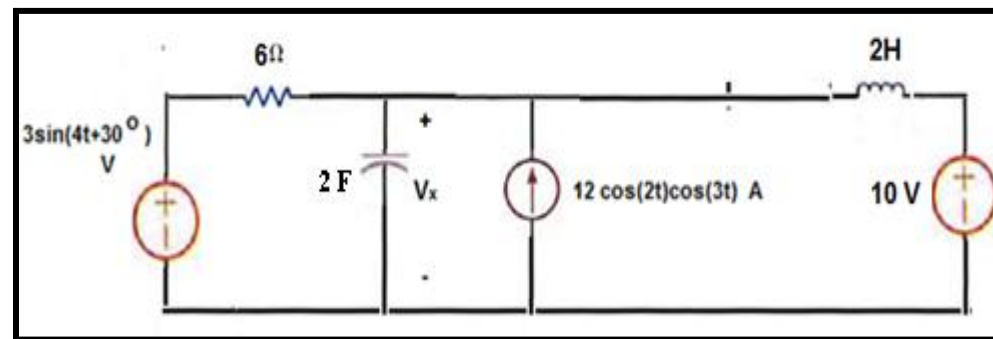


Figure Q2

Question Three [15%]

For the network in figure Q3.

- 1-compute the input source voltage V_s .
- 2-compute the total complex power supplied by the source.
- 3- compute the input power factor.

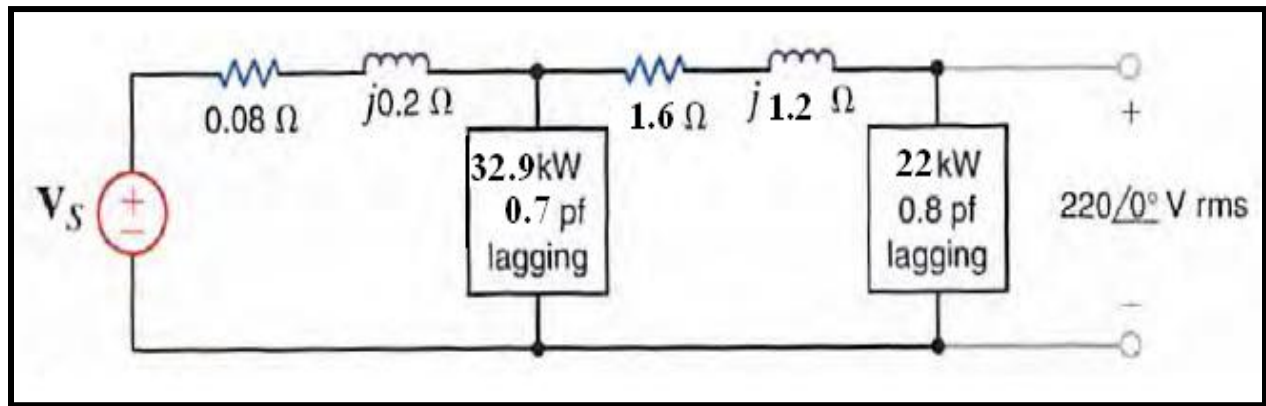


Figure Q3

Question Four [20%]

A three-phase positive sequence supplies **20KVA** with power factor **0.6** lagging to parallel combination of Δ connected and Y-connected loads. The Y-connected uses **10KVA** at reactive factor **0.6** lagging and has c-phase current of **25.7-j30.6 A**

- a. Find the a-phase line current
- b. Find the impedance per phase of the Δ connected load
- c. Find the magnitude of the line voltage
- d. Draw the single phase equivalent for the a-phase

Question Five [15%]

Find n for maximum power supplied to the $80\ \Omega$ load.

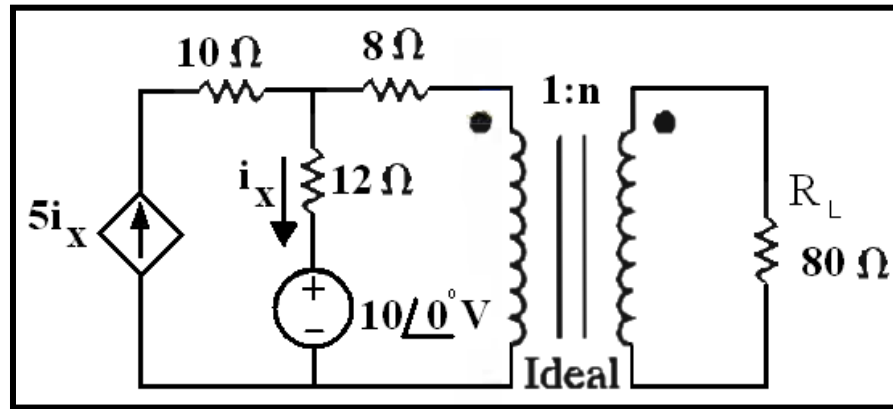


Figure Q5

Question Six [20%]

Find V_o in the following circuit in Figure Q6

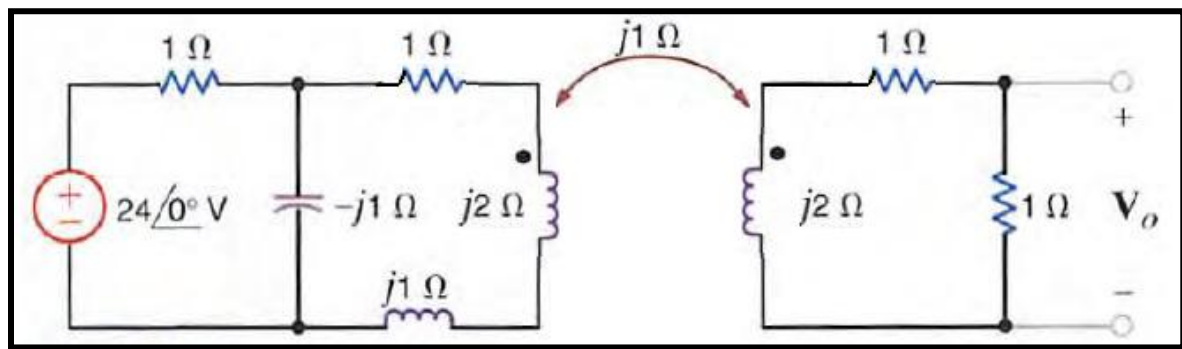


Figure Q6

END OF PAPER