

EENG224 HOMEWORK II

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1.

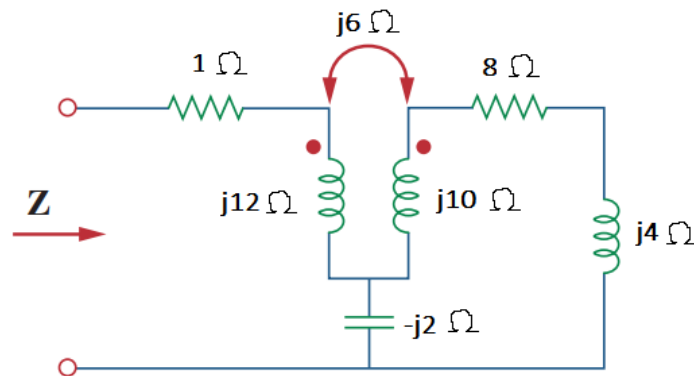
In a balanced three phase wye-wye system the load impedance is $10 + 1j \Omega$. The source has phase sequence abc and the line voltage $V_{ab} = 220 \angle 30^\circ \text{ V}_{\text{rms}}$. If the load voltage $V_{AN} = 120 \angle 0^\circ \text{ V}_{\text{rms}}$, determine the line impedance.

2.

A three phase abc sequence wye-connected source supplies 14kVA with a power factor 0.75 lagging to a parallel combination of a wye load and a delta load. If the wye load consumes 9 kVA at a power factor of 0.6 lagging and has a phase current of $10 \angle -30^\circ \text{ A rms}$ determine the phase impedance of delta load.

3.

Find the input impedance Z of circuit with transformer shown below.



4.

Find I_x in the ideal transformer circuit shown below.

