EE202 Homework 10

(1) For the balanced Y-Y system shown in Fig.1, the line has an impedance of 10-j5 (Ω), the load impedance is 90+j5 (Ω). Suppose that the phase sequence is positive, and $V_{an} = 110\sqrt{2}\angle 0^\circ$ (v). Determine the line voltages V_{ab}, V_{bc}, V_{ca}, the phase current I_{AN} and the phase voltage V_{AN}.

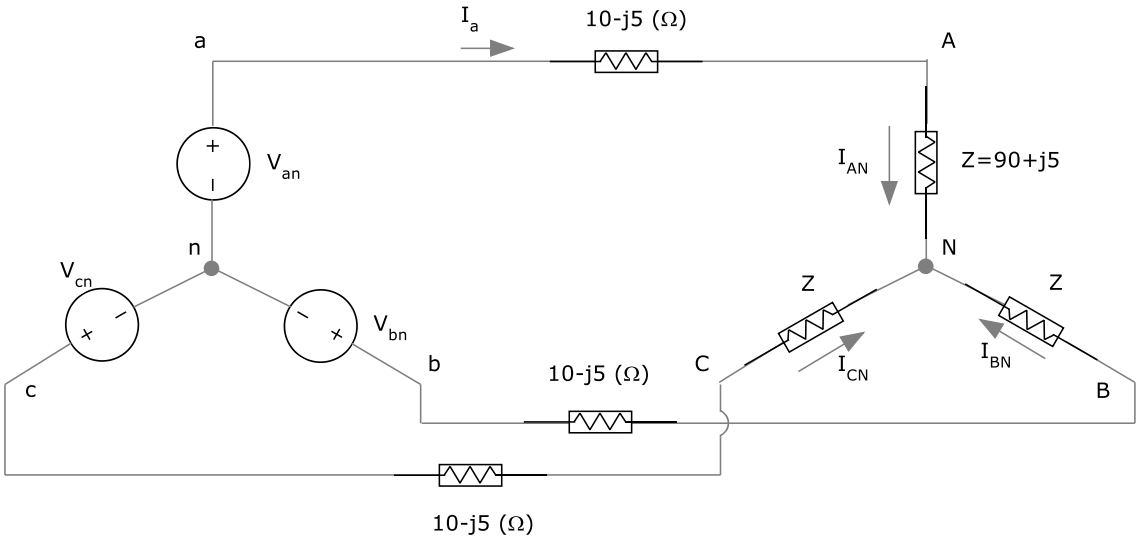

Fig. 1

(2) For the balanced Y-Δ system shown in Fig.2, the load impedance is Z= 10+j10 (Ω). Suppose that the phase sequence is positive, and $V_{an} = 110\sqrt{2}\angle 0^\circ$ (v). Determine the phase currents I_{AB}, I_{CA} and the line current I_a.

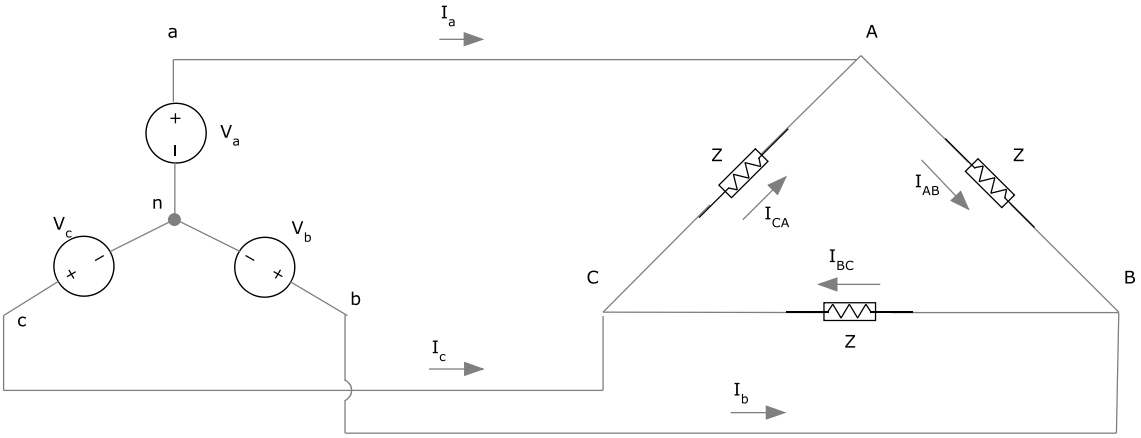

Fig. 2