Ex 9

1) $$U_{AB} = \frac{\frac{RR_2}{R+R_2}E_1}{R_1 + \frac{RR_2}{R+R_2}} - \frac{\frac{RR_1}{R+R_1}E_2}{R_2 + \frac{RR_1}{R+R_1}} = \frac{RR_2 E_1}{R_1R + R_1R_2 + RR_2} - \frac{RR_1 E_2}{R_2R + R_1R_2 + RR_1}$$

$$= \frac{R(R_2E_1 - R_1E_2)}{R_1R_2 + R_1R + R_2R}$$

on met un fil ⟺ passivation 1 des générateurs (court-circuit)

AN : $$U_{AB} = \frac{10(15 \times 20 - 10 \times 12)}{10 \times 15 + 10 \times 10 + 15 \times 10} = 4{,}5\,V$$

2) Millman en prenant $V_B = 0$ ⟹ application directe

$$V_A = \frac{\frac{E_1}{R_1} - \frac{E_2}{R_2}}{\frac{1}{R} + \frac{1}{R_1} + \frac{1}{R_2}} = \frac{R(R_2E_1 - R_1E_2)}{R_1R_2 + RR_1 + RR_2} = 4{,}5\,V.$$