

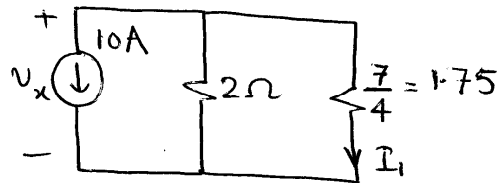
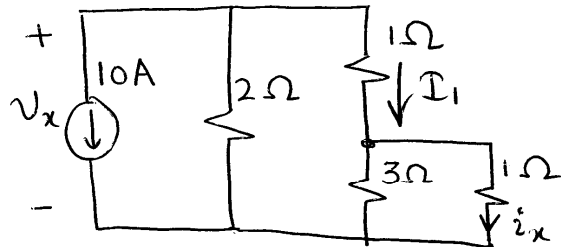
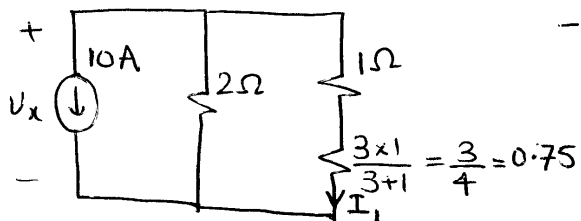
KEY

Quiz #3

EE 204/031

Find v_x & i_x

combine 3Ω & 1Ω
in parallel



using current division

$$I_1 = \frac{2}{2 + \frac{7}{4}} \times 10 \Rightarrow I_1 = -\frac{2}{\frac{15}{4}} \times 10$$

$$\Rightarrow I_1 = -\frac{16}{3} A = -5.33A$$

$$\therefore v_x = (-5.33)(1.75) = -9.32 \Rightarrow \boxed{v_x = -9.32 \text{ Volts}}$$

from original circuit use current division

$$i_x = \frac{3}{3+1} \times I_1 = \frac{3}{4} \times \left(-\frac{16}{3}\right) = -4$$

$$\Rightarrow \boxed{i_x = -4A}$$