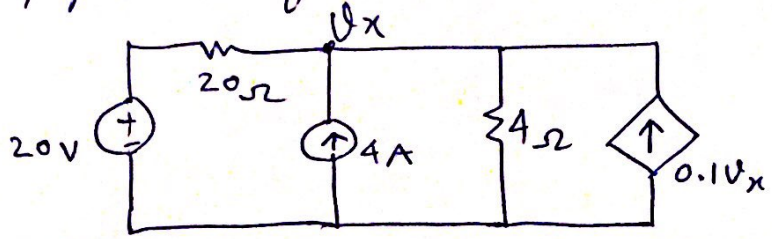
(Optional)
(Practice)

Pract. Prob 4.4 Superposition

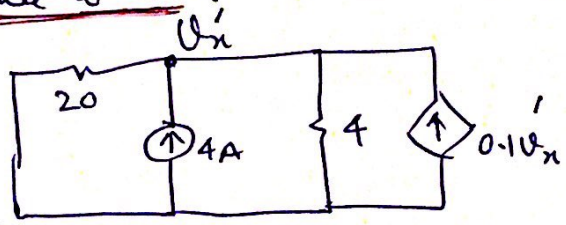
(P 134 4th Ed Alex & Sadiku)

Use superposition to find v_x.



Solution:

Due to 4A:

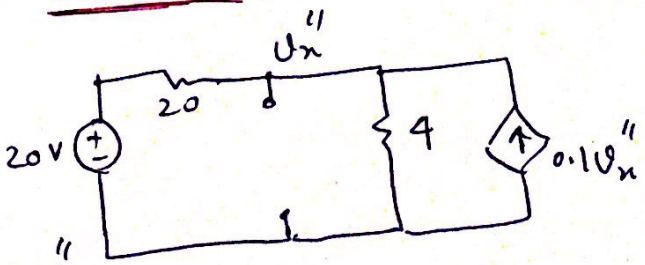


KCL at v'_x:

$$\frac{v'_x}{20} + \frac{v'_x}{4} = 4 + 0.1v'_x$$

$$v'_x = 20\ V$$

Due to 20V:



KCL at v''_x:

$$\frac{v''_x - 20}{20} + \frac{v''_x}{4} = 0.1v''_x$$

$$v''_x = 5$$

So

$$v_x = 5 + 20 = 25\ V$$