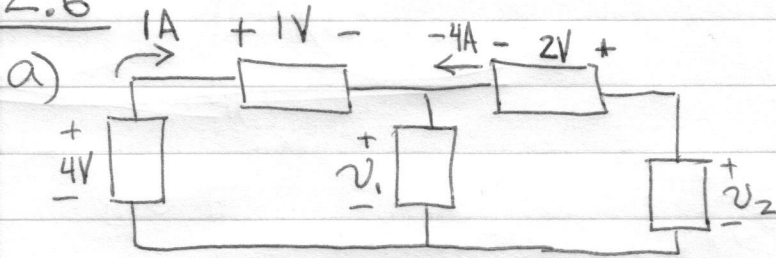


Corrections to HW1 solutions

Prob. 2.6



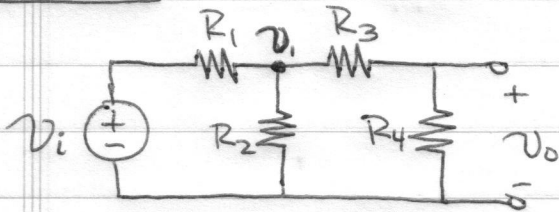
$$v_1 = 3V$$

Find v_2 : ← when originally written voltage was mistakenly put as $-2V$

$$v_1 + 2V - v_2 = 0V$$

$$\Rightarrow \boxed{v_2 = 5V}$$

Prob. 2.10



$$v_o = v_1 \left(\frac{R_4}{R_3 + R_4} \right)$$

This denotes "parallel" $R_1 \parallel R_2 \equiv \frac{R_1 R_2}{R_1 + R_2}$ or the parallel combination of R_1 & R_2 .

This equation was written incorrectly and neglected the effect of R_3 & R_4 .

$$v_1 = v_i \left(\frac{R_2 \parallel (R_3 + R_4)}{R_1 + (R_2 \parallel (R_3 + R_4))} \right)$$

Let $\boxed{R_2 = R_3 = R_4 = 1000 \Omega}$

$$v_o = v_1 \left(\frac{1k\Omega}{2k\Omega} \right) \Rightarrow v_o = v_1 \left(\frac{1}{2} \right) \Rightarrow v_1 = \frac{2v_i}{500}$$

$$v_o = \frac{v_i}{1000}$$

$$\frac{v_i}{500} = v_i \left(\frac{(1000)(2000)}{1000 + 2000} \right) \frac{1}{R_1 + \frac{(1000)(2000)}{1000 + 2000}}$$

$$\frac{1}{500} = \left(\frac{2000}{3} \right) \Rightarrow \boxed{R_1 = \frac{998}{3} k\Omega \approx 333k\Omega}$$