Problem #06

Calculate the value of V_{out}.
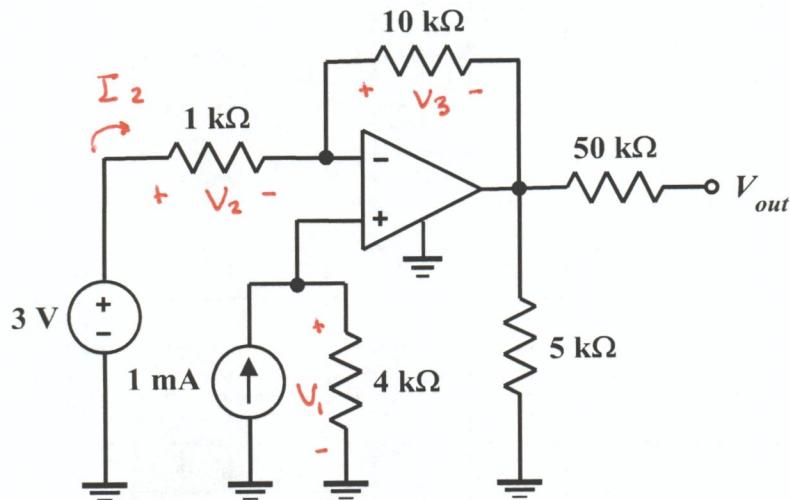
$$V_1 = (1mA)(4k\Omega) = 4V$$

$$V_2 = 3V - V_1 = 3V - 4V = -1V$$

$$I_2 = \frac{V_2}{1k\Omega} = \frac{-1V}{1k\Omega} = -1mA$$

$$V_3 = (10k\Omega) I_2 = -(10k\Omega)(1mA) = -10V$$

$$V_{out} = -V_3 + V_1 = -(-10V) + 4V = 14V$$