Chapter 5, Solution 21.

Calculate v_o in the op amp circuit of Fig. 5.60.

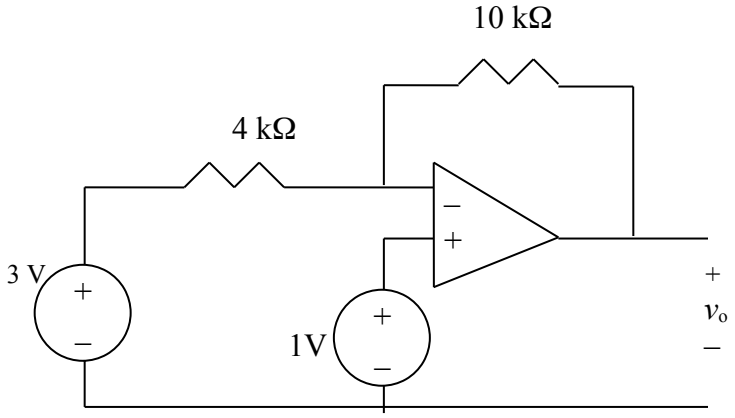

Figure 5.60
For Prob. 5.21.

Solution

Let the voltage at the input of the op amp be v_a.

$$v_a = 1\text{V}, \quad \frac{3-v_a}{4k} = \frac{v_a - v_o}{10k} \longrightarrow \frac{3-1}{4} = \frac{1-v_o}{10}$$

$$v_o = \mathbf{-4\ V}.$$