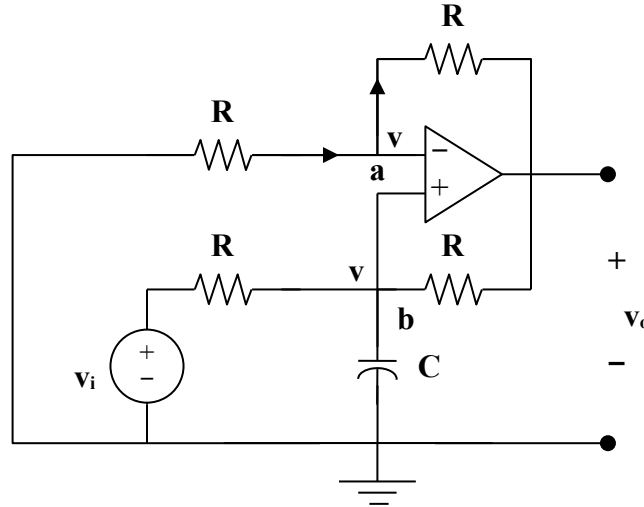


Chapter 6, Solution 73.

Consider the op amp as shown below:

Let $v_a = v_b = v$

$$\text{At node a, } \frac{0 - v}{R} = \frac{v - v_o}{R} \longrightarrow 2v - v_o = 0 \quad (1)$$



$$\begin{aligned} \text{At node b, } \frac{v_i - v}{R} &= \frac{v - v_o}{R} + C \frac{dv}{dt} \\ v_i &= 2v - v_o + RC \frac{dv}{dt} \end{aligned} \quad (2)$$

Combining (1) and (2),

$$v_i = v_o - v_o + \frac{RC}{2} \frac{dv_o}{dt}$$

or

$$v_o = \frac{2}{RC} \int v_i dt$$

showing that the circuit is a noninverting integrator.