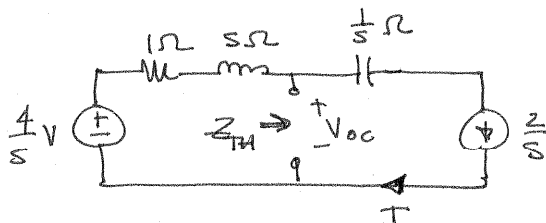


14.20 Use Thévenin's theorem to solve Problem 14.13.

SOLUTION:

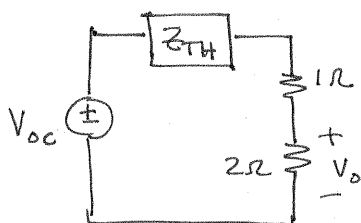


$$I = \frac{2}{s}$$

$$\frac{4}{s} = (1)I + sI + V_{oc}$$

$$V_{oc} = \frac{4}{s} - \frac{2}{s} - 2 = \frac{2}{s} - 2 = \frac{(-s+1)2}{s}$$

$$Z_{TH} = s + 1 \Omega$$



$$V_o = \frac{V_{oc}(2)}{2 + 1 + Z_{TH}} = \frac{4(-s+1)}{s[3+s+1]} = \frac{4(-s+1)}{s(s+4)}$$

$$V_o = \frac{1}{s} - \frac{5}{s+4}$$

$$v_o(t) = [1 - 5e^{-4t}]u(t) \text{ V}$$