

14.29 Find $v_o(t)$, $t > 0$, in the circuit shown in Fig. P14.29.

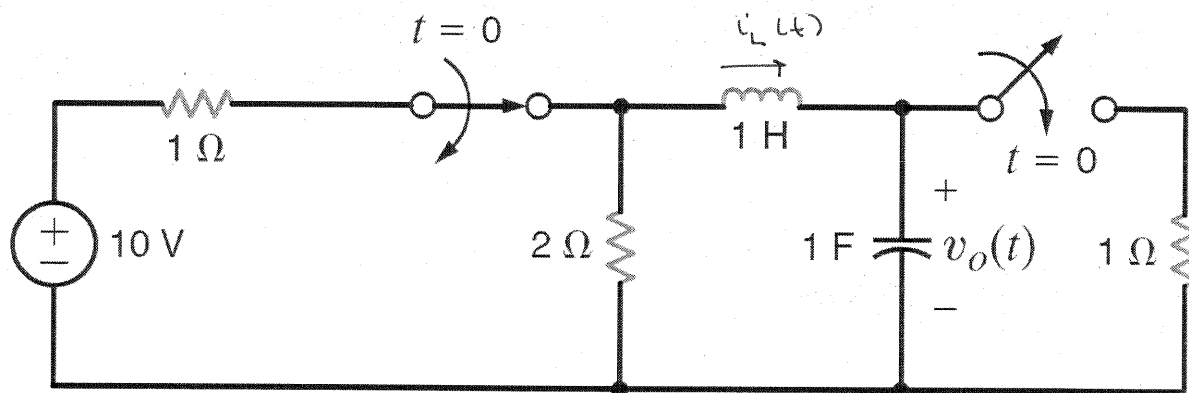
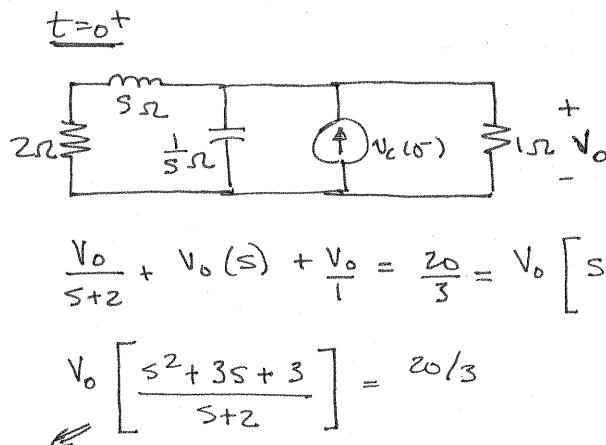
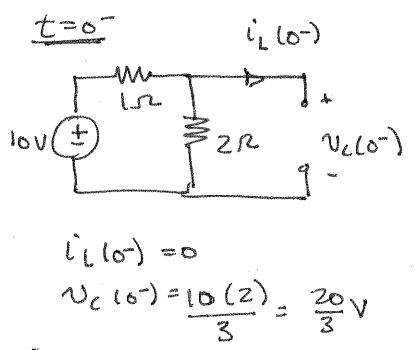


Figure P14.29

SOLUTION:



$$V_o = \frac{20/3 (s+2)}{s^2+3s+3} = \frac{K}{s+\frac{3}{2}-j\frac{\sqrt{3}}{2}} + \frac{K^*}{s+\frac{3}{2}+j\frac{\sqrt{3}}{2}}; \quad K = 3.85 \angle -30^\circ$$

$$v_o(t) = 7.7 e^{-(3/2)t} \cos \left[\left(\frac{\sqrt{3}}{2} \right) t - 30^\circ \right] u(t) \text{ V}$$