(1) You are given the circuit of Figure 7.1. $v_c(0^-) = 8 \text{ V}$. Find $v_c(t)$ for $t>0$.

**Ans:** $12 - e^{-t}[4\cos2t + 2\sin2t] \text{ V}$

![Figure 7.1: Circuit for problem 7.1](image)

(2) You are given the circuit of Figure 7.2. Find $v(t)$ for $t > 0$. Ans $30 + 0.021e^{-47.83t} - 6.02e^{-0.167t} \text{ V}$

![Figure 7.2: Circuit for problem 7.2](image)
(3) You are given the circuit of Figure 7.3.
(a) Find $i(t)$ for $t > 0$. Ans: $4.00655(e^{-0.522t} - e^{-11.98t})$ A
(b) Find $i_R(t)$ for $t > 0$. Ans: $0.785e^{-11.98t} - 0.0342e^{-0.522t}$ A

Figure 7.3: Circuit for problem 7.