The next problem(s) addresses the following course learning objective(s):

- Analyze various RL and RC circuits for transient response.
- Analyze various RL and RC circuits for steady state response.
- Analyze various RL and RC circuits for complete response.

1. Problem 7.6 in Assessing Objective 2 at page 248
2. Problem 7.3 at page 266
   Ans) (a) \( i_0(0^-) = 0 \)
   (b) \( i_L(0^+) = 62.5 \text{ [mA]} \)
   (c) \( i_0(0^+) = 87.5 \text{ [mA]} \)
   (d) \( i_L(0^+) = 62.5 \text{ [mA]} \)
   (e) \( i_0(\infty) = 150 \text{ [mA]} \)
   (f) \( i_L(\infty) = 0 \text{ [A]} \)
   (g) \( i_L(t) = 62.5e^{-4000t} \text{ [mA]} , t \geq 0 \)
   (h) \( v_L(0^-) = 0 \text{ [V]} \)
   (i) \( v_L(0^+) = -12.5 \text{ [V]} \)
   (j) \( v_L(\infty) = 0 \text{ [V]} \)
   (k) \( v_L(t) = -12.5e^{-4000t} \text{ [V]} , t \geq 0^+ \)
   (l) \( i_0(t) = 150 - 62.5e^{-4000t} \text{ [mA]} , t \geq 0^+ \)

3. Problem 7.15 at page 267
   Ans) (a) \( i_L(t) = 6e^{-500t} \text{ [A]} , t \geq 0 \)
   (b) \( v_L(t) = -600e^{-500t} \text{ [V]} , t \geq 0^+ \)
   (c) \( i_A(t) = -4e^{-500t} \text{ [A]} , t \geq 0^+ \)

4. Problem 7.23 at page 268
   Ans) (a) \( i_1(0^-) = 0.2 \text{ [mA]} , i_2(0^-) = 0.2 \text{ [mA]} \)
   (b) \( i_1(0^+) = 0.2 \text{ [mA]} , i_2(0^+) = -0.2 \text{ [mA]} \)
   (c) \( i_1(t) = 0.2e^{-500t} \text{ [mA]} , t \geq 0 \)
   (f) \( i_2(t) = -0.2e^{-500t} \text{ [mA]} , t \geq 0^+ \)

5. Problem 7.25 at page 269
   Ans) (a) \( i_0(t) = 10e^{-5000t} \text{ [mA]} , t \geq 0^+ \)
   (b) \( v_0(t) = [-(20/3)e^{-5000t} + (320/3)] \text{ [V]} , t \geq 0 \)
   (c) \( w_{\text{ramp}} = 2580 \text{ [\mu J]} \)

6. Problem 7.26 at page 269
   Ans) (a) \( w(t = 2ms) = 187.42 \text{ [\mu J]} \)
   (b) \( t = 3 \text{ [mSec]} \)
7. Problem 7.7 in Assessing Objective 3 at page 258

The next problem(s) addresses the following course learning objective(s):
- Analyze various RLC circuits for transient response.
- Analyze various RLC circuits for steady state response.
- Analyze various RLC circuits for complete response.

8. Problem 8.7 in Assessing Objective 2 at page 311
9. Problem 8.8 in Assessing Objective 2 at page 311
10. Problem 8.36 at page 324