Chapter 7, Solution 53.

(a) Before t = 0, $i = \frac{25}{3+2} = \mathbf{5\ A}$

After t = 0, $i(t) = i(0)e^{-t/\tau}$

$$\tau = \frac{L}{R} = \frac{4}{2} = 2, \quad i(0) = 5$$

$$i(t) = \mathbf{5}e^{-t/2}\ \boldsymbol{u(t)A}$$

(b) Before t = 0, the inductor acts as a short circuit so that the 2 Ω and 4 Ω resistors are short-circuited.

$$i(t) = \mathbf{6\ A}$$

After t = 0, we have an RL circuit.

$$i(t) = i(0)e^{-t/\tau}, \qquad \tau = \frac{L}{R} = \frac{3}{2}$$

$$i(t) = \mathbf{6}e^{-2t/3}\ \boldsymbol{u(t)A}$$