4. In the figure shown, after the switch S
    is closed at time $t = 0$, the emf of the
    source is automatically adjusted to
    maintain a constant current I through
    S.

(a) Find the current through the inductor as
    a function of time.
    [4 marks]

(b) At what time is the current through the
    resistor equal to the current through the
    inductor?
    [1 mark]