6-4)

In class, we wrote the Kirchhoff's loop law equation governing the current in an LR circuit as

$$IR = \mathcal{E}_B - L\frac{dI}{dt}$$

$$L\frac{dI}{dt} + RI = \mathcal{E}_B \ ,$$

and we asserted that the solution was

$$I(t) = \frac{\mathcal{E}_B}{R}\left(1 - e^{-\frac{tR}{L}}\right) \ .$$

Verify by substitution that this indeed to solution to the differential equation.