

Table 3-1 Voltage and current relationships			
unknown	R	C	L
i	$\frac{v}{R}$	$C \frac{dv}{dt}$	$\frac{1}{L} \int_0^t v dt + I_o$
v	$i \times R$	$\frac{1}{C} \int_0^t i dt + V_o$	$L \frac{di}{dt}$

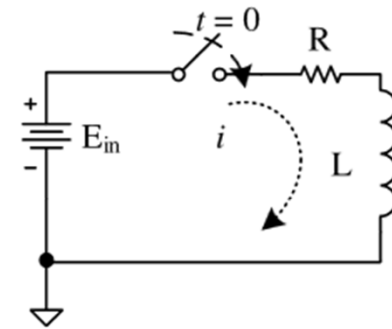
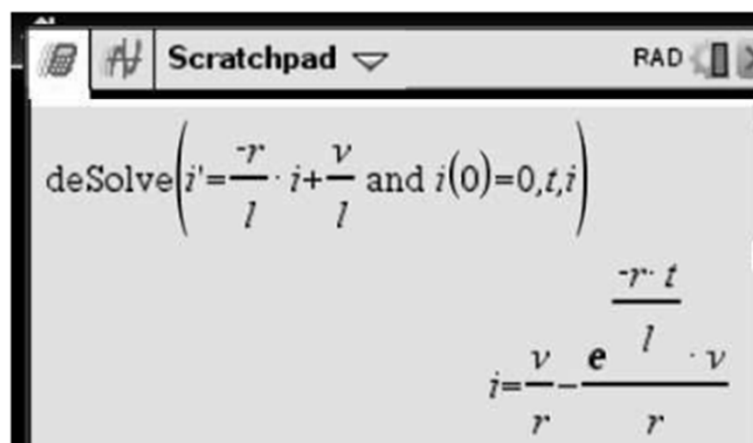


Figure 3-24 RL circuit with a step

$$i' = -\frac{R}{L}i + \frac{E_{\text{in}}}{L}$$

The TI-Nspire solution is shown in Figure 3-25.



The image shows a TI-Nspire Scratchpad window. The title bar includes a calculator icon, a pencil icon, the text "Scratchpad", and a dropdown arrow. On the right side of the title bar, it says "RAD" and has a small icon. The main area of the window contains the following text:

$$\text{deSolve}\left(i' = \frac{-r}{l} \cdot i + \frac{v}{l} \text{ and } i(0) = 0, t, i\right)$$

$$i = \frac{v}{r} - \frac{e^{\frac{-r \cdot t}{l}} \cdot v}{r}$$

$$i' = -\frac{R}{L}i + \frac{E_{\text{in}}}{L}$$

$$V_R =$$

$$i' = -\frac{R}{L}i + \frac{E_{\text{in}}}{L}$$

$$v_L =$$