Problem 1 (10 points)
Given inductor current $i_L(t)$, find and sketch the source voltage $v_s(t)$.

$$v_s(t) = v_R + v_L = 5i_L(t) + 3\frac{di_L(t)}{dt}$$

Note: to be more accurate, we can note the fact that $\frac{di_L}{dt}$ contains impulses at $t = 4$, $9$, and $12$ seconds. The impulses are $-12\delta(t-4)$, $3\delta(t-9)$ and $-3\delta(t-12)$, respectively.