Find the time constant seen by the inductor for $t > 0$.

\[ (20 + 5) = 4 \Omega \]

\[ 1 + 0.8V_\phi = \frac{V_\phi}{1} \implies 0.2V_\phi = 1 \]

\[ V_\phi = 5 \text{ V} \]

\[ 15 (1) = V_s + V_\phi + 4V_\phi = 0 \]

\[ V_s = 15 + 5 (5) = 40 \text{ V} \]

\[ R_{Th} = 40 \Omega \]

\[ \tau = \frac{L}{R_{Th}} = \frac{40 \text{ mH}}{40 \Omega} \]

\[ \tau = 1 \text{ ms} \]