



KCL at V:

$$\frac{V - \cos 500t}{100} + i_L - 0.2i_L = 0.$$

~~$$V + 0.8i_L$$~~

$$V + 80i_L = \cos 500t$$

$$(0.3\text{mH}) \frac{di_L}{dt} + 80i_L = \cos 500t.$$