Answer on Question#39024, Physics, Electric Circuits

The voltage is given as $V(t) = 120 \sin 100 \pi t \cos 100 \pi t$. Using trigonometric identity $2 \sin x \cos x = \sin 2x$, one might rewrite it as $V(t) = 60 \sin 200 \pi t$. Thus, knowing that sine has maximum value of 1, the maximum voltage is $V = 60$. The cyclic frequency is $\omega = 200 \pi$, and since $T = \frac{2\pi}{\omega} = \frac{1}{\nu}$, frequency is $\nu = \frac{\omega}{2\pi} = \frac{200\pi}{2\pi} = 100 \frac{1}{s}$.