Answer on question #61812, Physics / Electric Circuits

Question A certain inductor has an indutance of 0.50H and a resistance of
2.0. It is placed in series with a swtich, a 12.0-V battery and a 4.0 ohms resistor.
Find the time constant of the circuit and the energy stored in the inductor.

Solution Time constant is

$$\tau = \frac{L}{R} = \frac{0.5}{2+4} \approx 0.083\,s$$

Energy in inductor is

$$E = L\frac{I^2}{2} = 0.5\frac{U^2/R^2}{2} = 0.5\frac{12^2/6^2}{2} = 1\,J$$