Question 31993

The amount of work, done during the cycle is $A = Q_1 - Q_2$, where Q_1 is the amount of heat, that engine absorbs from hot reservoir (2000J), and Q_2 is the amount of heat that the engine expels (750J). Thus, $A = 2000\,J - 750\,J = 1250\,J$ - this is the work done during cycle.

The power N by definition is $N = \frac{A}{t}$. Knowing the work done during the cycle and the time of cycle, obtain $N = \frac{1250\,J}{0.5\,s} = 2500\,\frac{J}{s}$ - this is the power output of the engine.