

AP Physics - Thermodynamics - Heat Engines

Note Title

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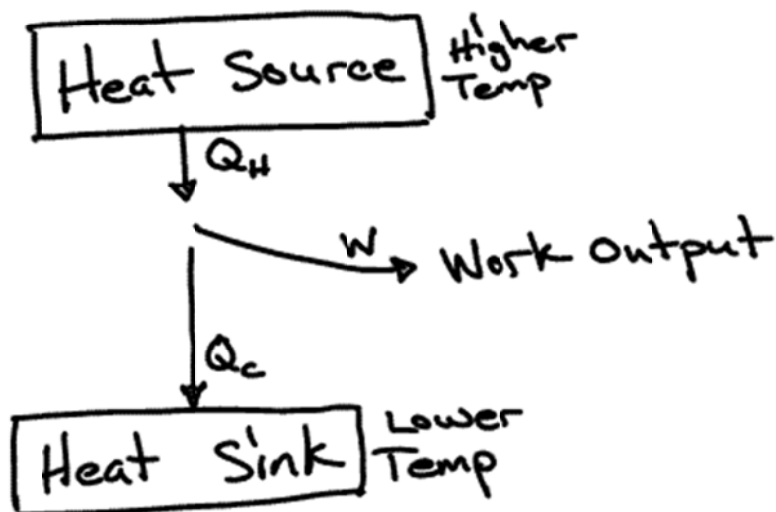
Second Law of Thermodynamics

Heat flows spontaneously from hot to cold.
Heat does not flow spontaneously from cold to hot.

↳ It only flows from cold to hot if work is done.

Heat Engines

A heat engine is a device that converts some flowing heat into usable work.



Thermal Efficiency (e)

The thermal efficiency of a heat engine is defined to be the ratio of the work output to the heat input.

$$e = \frac{W}{Q_H} = \frac{Q_H - Q_C}{Q_H} = 1 - \frac{Q_C}{Q_H}$$