

PHYSICS 151 READING ASSIGNMENT

FOR JULY 17

SECTIONS 11.6 THROUGH 11.9

Please notice that this file is two pages long.

11.6 - Heat Engines

- Heat engine - a device that uses the transfer of heat from a hot object to a cold object in order to do work.
- The equation for the maximum efficiency of a heat engine $e = 1 - \frac{T_C}{T_H}$, as well as, the fact that you cannot have a 100% efficient engine comes from the second law of thermodynamics which we'll get to later.

11.7 - Heat Pumps

- Heat pump - a device that does work in order to move heat from a hot object to a colder one.

11.8 - Entropy and the Second Law of Thermodynamics

- Irreversible process - happens in one direction only.
- The book's definition of entropy is fairly unusual, but a good one. Entropy is usually defined as the amount of "disorder". I think the book's definition makes it more precise.
- Second Law - only applies to isolated systems.
- An increase in thermal energy will also come along with an increase in entropy.

11.9 - systems, Energy, and Entropy

- This section mostly wraps things up for you. Enjoy.