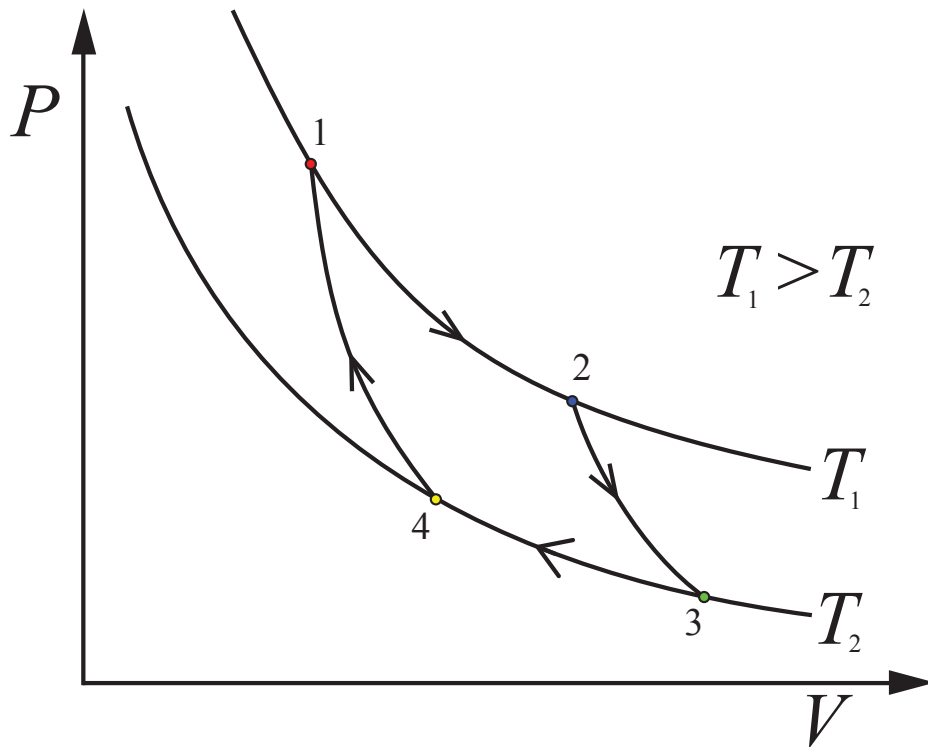


# Thermodynamics - Work - The limits of a Carnot cycle

March 28, 2012

A Carnot cycle is an idealized heat engine that involves two isothermic and two adiabatic processes.



Find and draw a process with equal work output but composed of isochoric and isobaric processes where the low pressure is 1 Pa and the high is 10 Pa. Use one mole of an ideal monatomic gas as the model. Estimate the efficiency loss taking the above Carnot cycle to have the values:

Cycle point	Pressures	Volumes	Temperatures
1	$P_1 = 3\text{Pa}$	$V_1 = 1\text{m}^3$	$T_1 = 7\text{K}$
2	$P_2 = 1.5\text{Pa}$	$V_2 = 2\text{m}^3$	$T_1 = 7\text{K}$
3	$P_3 = .5\text{Pa}$	$V_3 = 2.5\text{m}^3$	$T_2 = 2\text{K}$
4	$P_4 = 1\text{Pa}$	$V_4 = 1.5\text{m}^3$	$T_2 = 2\text{K}$