[tex3] **Carnot cycle of the classical ideal gas**

Describe the four steps of a Carnot engine, where the operating material is the classical ideal gas. The equation of state is $pV = nRT$. The internal energy is $U = C_V T$ with $C_V = \text{const}$. Sketch the Carnot cycle in the (V, p)-plane and in the (U, S)-plane.