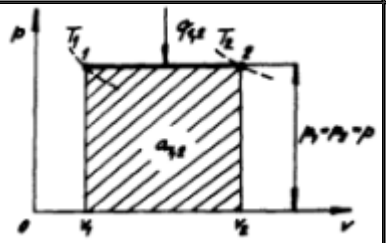
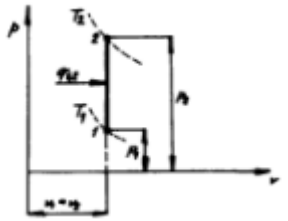
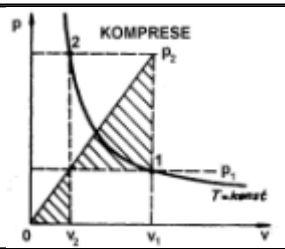
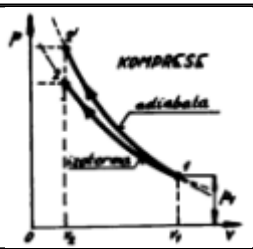
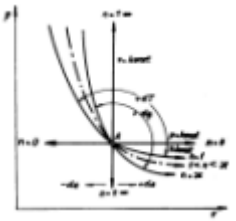
Tabulka termodynamických dějů pro m kg ideálního plynu

Děj	Izobarický	Izochorický	Izotermický	Adiabatický	Polytropický
Def.	$p_1=p_2=p$	$V_1=V_2=V$	$T_1=T_2=T$	$Q_{12}=0$	$n \in (-\infty,+\infty)$
Vzt. pVT	$\frac{T_1}{V_1}=\frac{T_2}{V_2}=\frac{p}{m.r}$	$\frac{T_1}{p_1}=\frac{T_2}{p_2}=\frac{V}{m.r}$	$p_1.V_1=p_2.V_2=r.T$	$p_1.V_1^{\kappa}=p_2.V_2^{\kappa}$ $\frac{T_2}{T_1}=\left(\frac{p_2}{p_1}\right)^{\frac{\kappa-1}{\kappa}}=\left(\frac{V_1}{V_2}\right)^{\kappa-1}$	$p_1.V_1^{n}=p_2.V_2^{n}$ $\frac{T_2}{T_1}=\left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}=\left(\frac{V_1}{V_2}\right)^{n-1}$
ΔU	$\Delta U=U_2-U_1=c_v m(T_2-T_1)$	$\Delta U=U_2-U_1=c_v m(T_2-T_1)$	$\Delta U=0$	$\Delta U=U_2-U_1=c_v m(T_2-T_1)$	$\Delta U=U_2-U_1=c_v m(T_2-T_1)$
Δi	$\Delta I=I_2-I_1=c_p m(T_2-T_1)$	$\Delta I=I_2-I_1=c_p m(T_2-T_1)$	$\Delta I=0$	$\Delta I=I_2-I_1=c_p m(T_2-T_1)$	$\Delta I=I_2-I_1=c_p m(T_2-T_1)$
ΔS	$\Delta S=c_p m\ln\frac{T_2}{T_1}$	$\Delta S=c_v m\ln\frac{T_2}{T_1}$	$\Delta S=r.m\ln\frac{V_2}{V_1}=r.m\ln\frac{p_1}{p_2}$	$\Delta S=\frac{Q_{12}}{T}=0\Rightarrow S_2=S_1=konst.$	$\Delta S=c_v\frac{n-\kappa}{n-1}m\ln\frac{T_2}{T_1}$
Q_{12}	$Q_{12}=I_2-I_1=c_p m(T_2-T_1)$ $Q_{12}=\frac{\kappa}{\kappa-1}p(V_2-V_1)$	$Q_{12}=U_2-U_1=c_v m(T_2-T_1)$ $Q_{12}=\frac{1}{\kappa-1}V(p_2-p_1)$	$Q_{12}=m.rT.\ln\frac{p_1}{p_2}=p_1V_1\ln\frac{V_2}{V_1}$	$Q_{12}=0$	$Q_{12}=c_v\frac{n-\kappa}{n-1}m(T_2-T_1)=c_n m(T_2-T_1)$ $Q_{12}=\frac{\kappa-n}{\kappa-1}A_{12}=\frac{1}{n}\frac{\kappa-n}{\kappa-1}A_{t12}$
A_{12}	$A_{12}=p(V_2-V_1)=m.r(T_2-T_1)$ $A_{12}=\frac{\kappa-1}{\kappa}Q_{12}$	$A_{12}=0$	$A_{12}=m.rT.\ln\frac{p_1}{p_2}=p_1V_1\ln\frac{V_2}{V_1}$ $A_{12}=Q_{12}$	$A_{12}=U_1-U_2=\frac{r}{\kappa-1}m(T_1-T_2)$ $A_{12}=\frac{p_1V_1-p_2V_2}{\kappa-1}=\frac{p_1V_1}{\kappa-1}\left[1-\left(\frac{p_2}{p_1}\right)^{\frac{\kappa-1}{\kappa}}\right]$	$A_{12}=m\frac{r}{n-1}(T_1-T_2)=\frac{p_1V_1-p_2V_2}{n-1}$ $A_{12}=\frac{p_1V_1}{n-1}\left[1-\left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}\right]$
A_{t12}	$A_{t12}=0$	$A_{t12}=V(p_1-p_2)=mr(T_1-T_2)$	$A_{t12}=m.rT.\ln\frac{p_1}{p_2}=p_1V_1\ln\frac{V_2}{V_1}$ $A_{t12}=A_{12}=Q_{12}$	$A_{t12}=I_1-I_2=\kappa.A_{12}$ $A_{t12}=\frac{\kappa}{\kappa-1}p_1V_1\left[1-\left(\frac{p_2}{p_1}\right)^{\frac{\kappa-1}{\kappa}}\right]$	$A_{t12}=m\frac{n.r}{n-1}(T_1-T_2)$ $A_{t12}=\frac{n}{n-1}p_1V_1\left[1-\left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}\right]$
Dia. p-V					
Dia. T-s