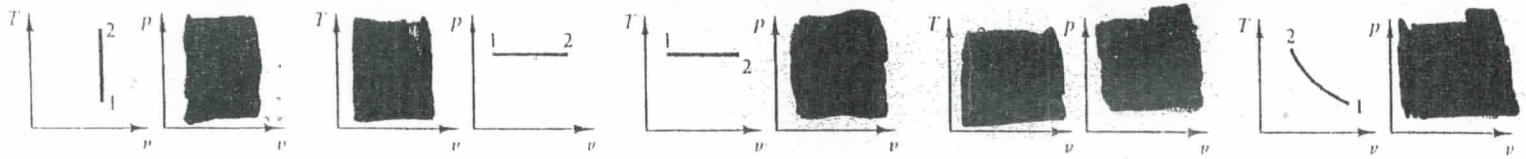
Table 3.1 Process-Relations for Ideal Gas

Process	Q	$-\int_1^2 p\,dV$	$\int_1^2 V\,dp$	ΔU	p-V-T Relations	Exponent in $pV_n = C$
[redacted]	$mc_v(T_2 - T_1)$	[redacted]	$V(p_2 - p_1)$	[redacted]	$\frac{T_2}{T_1} = \frac{p_2}{p_1}$	$n =$ [redacted]
[redacted]	[redacted]	$p(V_1 - V_2)$	[redacted]	$mc_v(T_2 - T_1)$	[redacted]	$n = 0$
[redacted]	[redacted]	[redacted]	[redacted]	0	$p_1V_1 = p_2V_2$	$n = 1$
[redacted]	0	[redacted]	[redacted]	[redacted]	$p_1V_1^\gamma = p_2V_2^\gamma$, $\frac{T_2}{T_1} = \left(\frac{V_1}{V_2}\right)^{\gamma-1} = \left(\frac{p_2}{p_1}\right)^{(\gamma-1)/\gamma}$	[redacted]
Reversible polytropic	$mc_v\left(\frac{\gamma - n}{1 - n}\right)(T_2 - T_1)$	$\frac{p_2V_2 - p_1V_1}{n - 1}$	[redacted]	$mc_v(T_2 - T_1)$	[redacted]	$n = n$



Constant volume | Constant pressure | Constant temperature | Reversible adiabatic | Reversible polytropic