Critical Exponents

Property		Singularity	Mean field	Exact 2D	best 3D	exact 4D+
C	$\sim$	$\lvert T-T_c\rvert^{-\alpha}$	$\alpha=0$	0^*	0.11	0
M	$\sim$	$(T_c-T)^{\beta}$	$\beta=1/2$	$1/8$	0.33	$1/2$
χ	$\sim$	$\lvert T-T_c\rvert^{-\gamma}$	$\gamma=1$	$7/4$	1.24	1

* $\frac{1}{\alpha}t^{\alpha} = \frac{1}{\alpha}e^{\alpha \ln t} \approx \frac{1}{\alpha}(1+\alpha \ln t) \Rightarrow \ln t = \lim_{\alpha \to 0} \frac{t^{\alpha}-1}{\alpha}$

$\therefore$ $\alpha = 0$ allows log singularity