1 Phase transition of Ideal Bose System

I think my understanding of this problem was a bit lacking. The lecture notes mention that we should, in order to find C_V above T_c, solve the number equation for $\mu(T)$. The number equation, before any assumptions, looks like

$$n(\mu, T) = \frac{1}{4\pi^2}\left(\frac{2m}{\hbar^2}\right)^{3/2}\int_0^\infty \frac{\epsilon^{1/2}\, d\epsilon}{e^{\beta(\epsilon-\mu)}-1} \tag{1}$$

We also have, I think, that for $T > T_c$, no particles in the ground state. Why is this? I think this just comes out of the definition of T_c as the point where $\mu = 0$: above T_c, $\mu < 0$. We had an expression for n at T_c:

$$n(0, T_c) = \frac{1}{4\pi^2}\left(\frac{2m}{\hbar^2}\right)^{3/2}\int_0^\infty \frac{\epsilon^{1/2}\, d\epsilon}{e^{\beta(\epsilon)}-1} \tag{2}$$

$$= \frac{1}{4\pi^2}\left(\frac{2m}{\beta\hbar^2}\right)^{3/2}\zeta(\frac{3}{2})\Gamma(\frac{3}{2}) \tag{3}$$

I think that ultimately the right approach to deriving the values for C_V for $T > T_c$ will be to set these expressions equal, and solve for μ. Then, the integrals can be done numerically, which is where I believe the somewhat odd number 3.66 comes from.