$$1. \int_{-\alpha}^{\alpha} \frac{1}{\sigma\sqrt{2\pi}} e^{\frac{-1}{2}(\frac{x-\mu}{\sigma})^2} dx = 1$$

$$2. \ln(x^\alpha y^\beta) = \alpha \ln(x) + \beta \ln(y)$$

$$3. k_{t+1} = \frac{(1-\delta)k_t}{1+n} + \frac{sA_t k_t^\theta}{1+n}$$

4. $E(X) = \int_0^2 x(1-0.5x)\,dx = \int_0^2 x\,dx - 0.5\int_0^2 x^2\,dx = \left[\frac{x^2}{2}\right]_0^2 - 0.5\left[\frac{x^3}{3}\right]_0^2 = 2 - 0.5.\frac{8}{3} = \frac{2}{3}$

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