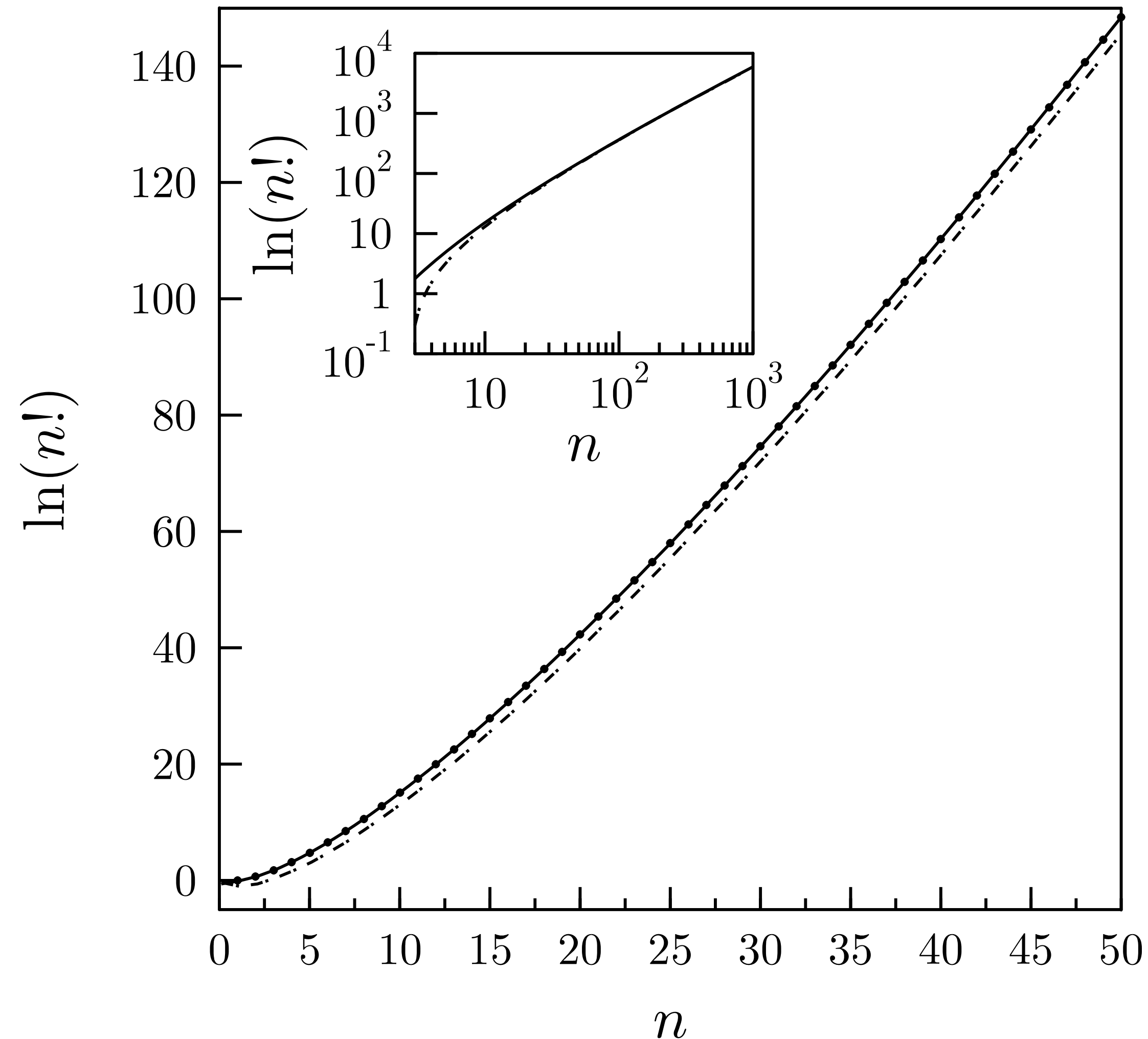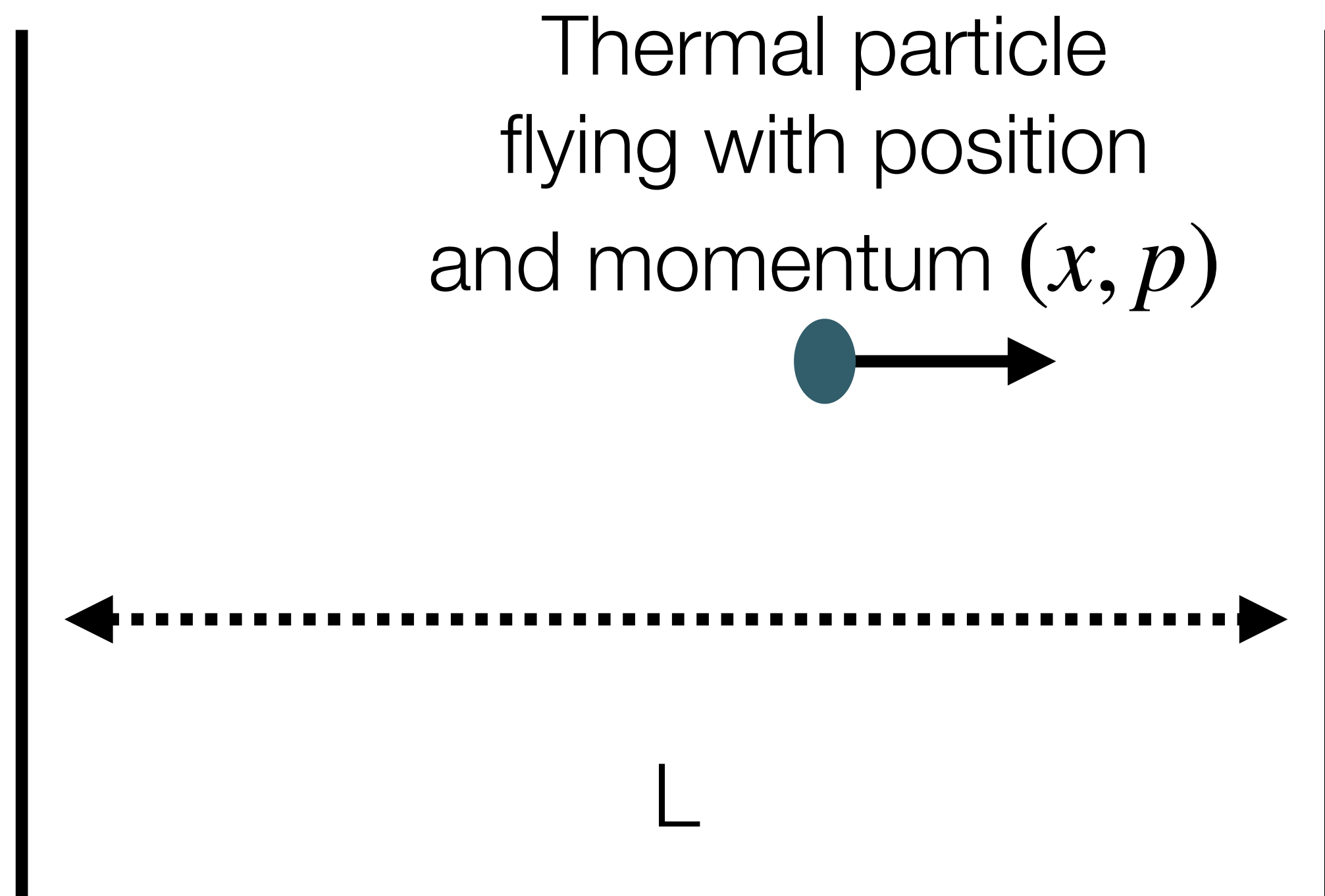# Accuracy of Stirling

- Points: $\log(n!)$
- Dashed: $n \log n - n$
- Solid: $\log(n^n e^{-n} \sqrt{2\pi n})$

We will used the dashed

Classical thermal particle in a box of size L in 1D

Thermal particle
flying with position
and momentum (x, p)

The energy is

$$\varepsilon(p) = \frac{p^2}{2m}$$

L

Partition Function?