chapter 5

Chenxi Gu
2017311017

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1   5.1

(a)

$$P((x - \mu) > a) * a^2$$

$$= a^2 * \int_{|x-\mu|>a} f(x)dx$$

$$< \int_{|x-\mu|>a} (x - \mu)^2 f(x)dx \tag{1}$$

$$< \int (x - \mu)^2 f(x)dx$$

$$= \sigma^2$$

(b)

$$P\left(\left|\frac{\sum(x_i - \mu)}{n}\right| > a\right) < P(|x_i - \mu| > a)^n < \left(\frac{\sigma^2}{a^2}\right)^n \tag{2}$$