Mathematical Biostatistics Boot Camp: Random Formulae

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This document contains random formulae images I used in the notes.

$$A = \{1, 2\}$$

$$B = \{1, 2, 3\}$$

$$E[X^2] = \int_0^1 x^2 dx \tag{1}$$

$$= \frac{x^3}{3}\Big|_0^1 = \frac{1}{3} \tag{2}$$

$$\frac{|x-\mu|}{k\sigma} > 1$$

Over the set $\{x : |x-\mu| > k\sigma\}$

$$\frac{(x-\mu)^2}{k^2\sigma^2} > 1$$

$$\frac{1}{k^2\sigma^2}\int_{-\infty}^{\infty}(x-\mu)^2 f(x)dx$$

$$\frac{1}{k^2\sigma^2}E[(X-\mu)^2] = \frac{1}{k^2\sigma^2}\mathrm{Var}(X)$$