

4.6: Chapter 4 Formula Review

4.1 Introduction

$$X \sim N(\mu, \sigma)$$

μ = the mean; σ = the standard deviation

4.2 The Standard Normal Distribution

$$Z \sim N(0, 1)$$

z = a standardized value (z-score)

mean = 0; standard deviation = 1

To find the k^{th} percentile of X when the z-scores is known:

$$k = \mu + (z)\sigma$$

$$\text{z-score: } z = \frac{x - \mu}{\sigma} \text{ or } z = \frac{|x - \mu|}{\sigma}$$

Z = the random variable for z-scores

$$Z \sim N(0, 1)$$

Normal Distribution: $X \sim N(\mu, \sigma)$ where μ is the mean and σ is the standard deviation.

Standard Normal Distribution: $Z \sim N(0, 1)$.

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