Miscellanea

math612.0 A1: From numbers through algebra to calculus and linear algebra

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Simple probabilities in R

R has functions to compute probabilities based on most common distributions.

If X is a random variable with a known distribution, then R can typically compute values of the cumulative distribution function or:

$$F(x) = P[X \leq x]$$

Computing normal probabilities in R

To compute probabilities $X \sim n(\mu, \sigma^2)$ is usually transformed, since we know that

$$Z := \frac{X - \mu}{\sigma} \sim (0, 1)$$

The probabilities can then be computed for either X or Z with the *pnorm* function in R.

Introduction to hypothesis testing