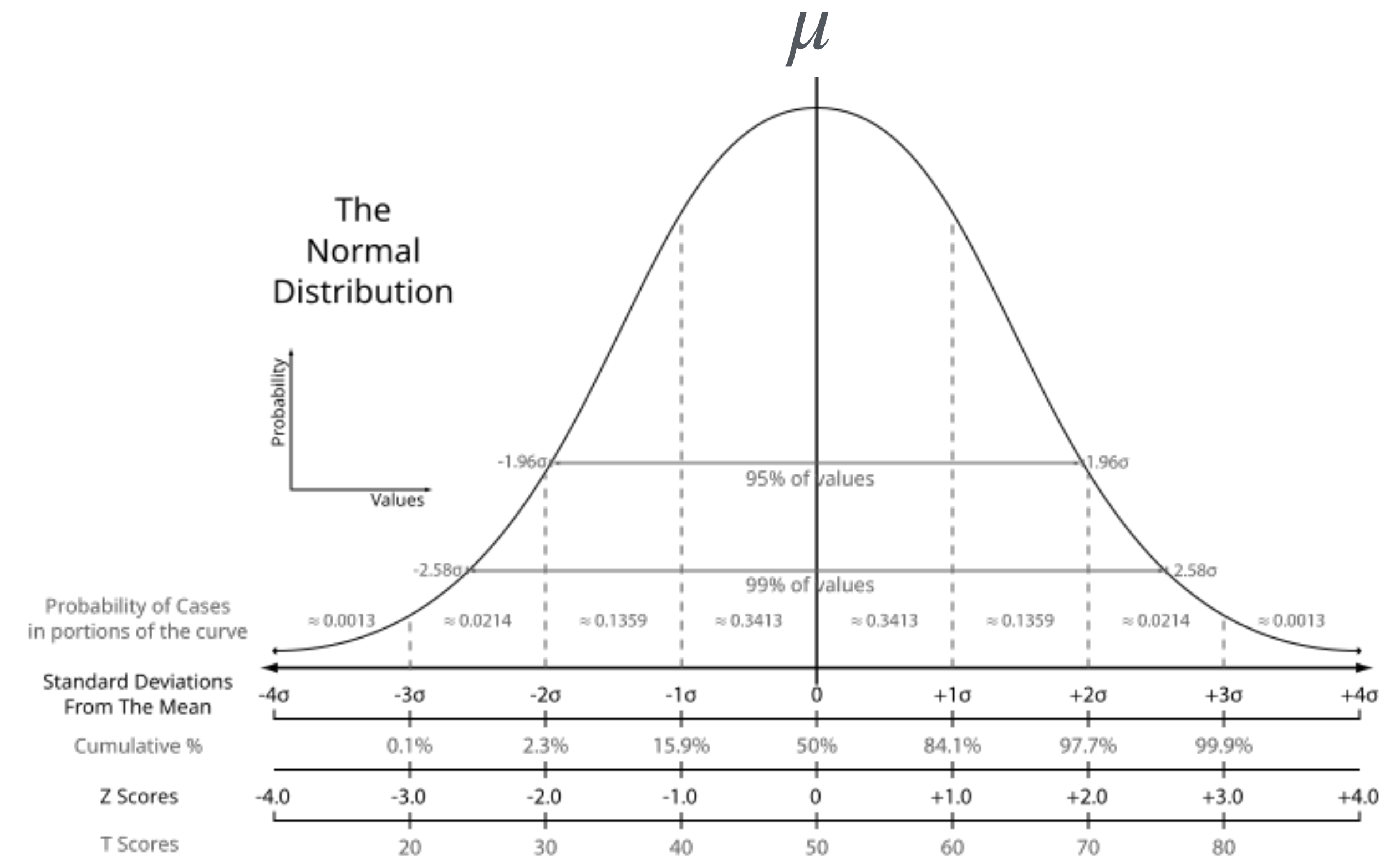# Probability distribution

Crash course

- We can use standard probability distributions to define these relations

- If a variable y follows a normal distribution:

  - $P(y) = P(y|\mu, \sigma) = Normal(y|\mu, \sigma)$

- Where μ and σ are **parameters**

  - μ: is the mean, a location parameter

  - σ: sigma is the standard deviation, a scale parameter

Simplest probabilistic model

Fit parameters to a set of measurements

- Measure a set of y_i values:

- Find the "best fitting" normal distribution by choosing μ and σ such that the $N(\mu, \sigma)$ distribution approximates the histogram of the y_i values

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