

**Suggested reading:** [OpenIntro Statistics, 3rd edition](#), Chapter 3, Sections 3.1 - 3.2

**LO 1.** Define the standardized (Z) score of a data point as the number of standard deviations it is away from the mean:  $Z = \frac{x - \mu}{\sigma}$ .

**LO 2.** Use the Z score

- if the distribution is normal: to determine the percentile score of a data point (using technology or normal probability tables)
- regardless of the shape of the distribution: to assess whether or not the particular observation is considered to be unusual (more than 2 standard deviations away from the mean)

**LO 3.** Depending on the shape of the distribution determine whether the median would have a negative, positive, or 0 Z score keeping in mind that the mean always has a Z score of 0.

**LO 4.** Assess whether or not a distribution is nearly normal using the 68-95-99.7% rule or graphical methods such as a normal probability plot.

**Test yourself:** True/False: In a right skewed distribution the Z score of the median is positive.