

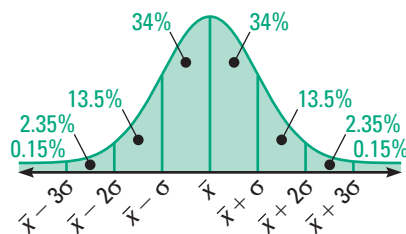
BIG IDEAS

For Your Notebook

Big Idea 1

Using Normal Distributions

A normal distribution is modeled by a symmetric, bell-shaped curve. The area under a normal curve is distributed as shown below. A z-score is the number of standard deviations a data value lies above or below the mean. You can use z-scores and the standard normal table to find probabilities related to any normal distribution.



$$z\text{-score} = \frac{x - \bar{x}}{\sigma}$$

Big Idea 2

Working with Samples

You can use several different methods to choose a sample from a population. Random sampling is most likely to produce an unbiased sample.

| | | |
|-----------------------------|---|------------------|
| Self-selected sample | Members volunteer. | Often biased |
| Systematic sample | A rule is used to select members. | Sometimes biased |
| Convenience sample | Easy-to-reach members are selected. | Often biased |
| Random sample | Every member has an equal chance of being selected. | Unbiased |