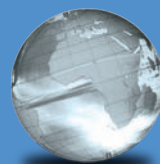


GLOBAL  
EDITION



# STATISTICS

for **BUSINESS** and **ECONOMICS**

14TH EDITION

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## APPLET CORRELATION

| Applet  | Concept Illustrated   | Description  | Applet Activity  |
|---|---|--|--|
| Random numbers  | Uses a random number generator to determine the experimental units to be included in a sample.  | Generates random numbers from a range of integers specified by the user.   | <b>1.1</b> , 44; <b>1.2</b> , 44; <b>3.6</b> , 198; <b>4.1</b> , 219; <b>4.2</b> , 219; <b>4.8</b> , 271 |
| Sample from a population  | Assesses how well a sample represents the population and the role that sample size plays in the process.                                | Produces random sample from population from specified sample size and population distribution shape. Reports mean, median, and standard deviation; applet creates plot of sample.  | <b>4.4</b> , 233; <b>4.6</b> , 257; <b>4.7</b> , 271   |
| Sampling distributions  | Compares means and standard deviations of distributions; assesses effect of sample size; illustrates unbiasedness.                      | Simulates repeatedly choosing samples of a fixed size $n$ from a population with specified sample size, number of samples, and shape of population distribution. Applet reports means, medians, and standard deviations; creates plots for both. | <b>5.1</b> , 310; <b>5.2</b> , 310   |
| <b>Long-run probability demonstrations</b> illustrate the concept that theoretical probabilities are long-run experimental probabilities. |   |  |  |
| Simulating probability of rolling a 6   | Investigates relationship between theoretical and experimental probabilities of rolling 6 as number of die rolls increases.             | Reports and creates frequency histogram for each outcome of each simulated roll of a fair die. Students specify number of rolls; applet calculates and plots proportion of 6s.   | <b>3.1</b> , 162; <b>3.3</b> , 174; <b>3.4</b> , 175; <b>3.5</b> , 188                                   |
| Simulating probability of rolling a 3 or 4  | Investigates relationship between theoretical and experimental probabilities of rolling 3 or 4 as number of die rolls increases.        | Reports outcome of each simulated roll of a fair die; creates frequency histogram for outcomes. Students specify number of rolls; applet calculates and plots proportion of 3s and 4s.   | <b>3.3</b> , 174; <b>3.4</b> , 175   |
| Simulating the probability of heads: fair coin  | Investigates relationship between theoretical and experimental probabilities of getting heads as number of fair coin flips increases.   | Reports outcome of each fair coin flip and creates a bar graph for outcomes. Students specify number of flips; applet calculates and plots proportion of heads.  | <b>3.2</b> , 162; <b>4.2</b> , 219   |
| Simulating probability of heads: unfair coin ( $P(H) = .2$ )  | Investigates relationship between theoretical and experimental probabilities of getting heads as number of unfair coin flips increases. | Reports outcome of each flip for a coin where heads is less likely to occur than tails and creates a bar graph for outcomes. Students specify number of flips; applet calculates and plots the proportion of heads.                              | <b>4.3</b> , 233   |
| Simulating probability of heads: unfair coin ( $P(H) = .8$ )  | Investigates relationship between theoretical and experimental probabilities of getting heads as number of unfair coin flips increases. | Reports outcome of each flip for a coin where heads is more likely to occur than tails and creates a bar graph for outcomes. Students specify number of flips; applet calculates and plots the proportion of heads.                              | <b>4.3</b> , 233   |
| Simulating the stock market   | Theoretical probabilities are long run experimental probabilities.  | Simulates stock market fluctuation. Students specify number of days; applet reports whether stock market goes up or down daily and creates a bar graph for outcomes. Calculates and plots proportion of simulated days stock market goes up.     | <b>4.5</b> , 234   |
| Mean versus median  | Investigates how skewedness and outliers affect measures of central tendency.   | Students visualize relationship between mean and median by adding and deleting data points; applet automatically updates mean and median.  | <b>2.1</b> , 88; <b>2.2</b> , 88; <b>2.3</b> , 88  |

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