

A Note about Rounding

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The statistical operations discussed in this book often result in answers given in decimals. Examples include 6.15612, 2.3464, and so on. When your results are expressed in decimals and not in whole numbers, you will have to round them off. Rounding off numbers is often seen as confusing and arbitrary. However, with the help of a few rules of thumb, you'll find rounding off to be less daunting.

- ✓ When a decimal is followed by numbers greater than 5, round up (e.g., 3.26 is 3.3); when it is followed by a number less than 5, round down (e.g., 3.21 is 3.2).
- ✓ When an odd decimal is followed by a 5, round up (e.g., 2.75 is 2.8).
- ✓ When an even decimal is followed by a 5, round down (2.65 is 2.6).
- ✓ Decimals generally are rounded off to the 10th place (e.g., 2.56 is 2.5), 100th place (e.g., 2.563 is 2.56), or 1000th place (e.g., 2.5638 is 2.564).

As a general guide, we round off decimals in this text to the 10th place, with the following exceptions:

- 1) Many of the illustrations in the chapters as well as the end-of chapter exercises require intermediate steps to obtain the final 10th place until we get to the final answers.
- 2) There are some statistical techniques (example PRE measures) that require rounding off to the 100th place.
- 3) In some cases, when it added more clarity and precision, we rounded off to the 100th or 1000th place.

As with all rules, the rules of rounding need to be applied with good judgment. In situations requiring great precision (such as when measuring the speed of Olympic runners, when differences in split seconds may be critical) rounding to the 1000th or even to the 10000th may be required. However, with most of the examples and problems in this text, rounding off to the 10th place is more than adequate.

Your instructor may direct you to round off to the 10th, 100th, or 1000th place. Don't be frustrated if your answers differ slightly from the answers to the odd-numbered problems given in this book or from those of your classmates. Slight differences due to rounding are generally trivial.