A rounded number has about the same value as the number you start with, but it is less precise.

When rounding a number, you first need to ask: what are you rounding it to?

Numbers can be rounded to whole numbers (i.e. the nearest ten, the nearest hundred, the nearest thousand, and so on). Or, fractions can be rounded to a specified number of decimal places (i.e. the nearest tenth, the nearest hundredth, the nearest thousandth, and so on).

For example, consider the number 4,827.1567

- 4,827.1567 rounded to the nearest ten is 4,830
- 4,827.1567 rounded to the nearest hundred is 4,800
- 4,827.1567 rounded to the nearest thousand is 5,000
- 4,827.1567 rounded to the nearest tenth is 4,827.2
- 4,827.1567 rounded to the nearest hundredth is 4,827.16
- 4,827.1567 rounded to the nearest thousandth is 4,827.157

Here's some tips to avoid getting confused:
Look only at the number in the place you are rounding to and the number that follows it. For example, to round 5.3824791401 to the nearest hundredth, just look at the number in the hundredths place—8—and the number that follows it—2. Then you can easily round it to 5.38.

- If the number you are rounding is followed by 5, 6, 7, 8, or 9, round the number up.

  For example: 38.16299 rounded to the nearest tenth is 38.2.

- If the number you are rounding is followed by 0, 1, 2, 3, or 4, round the number down.

  For example: 38.16299 rounded to the nearest hundredth is 38.16.

- Rounding to the nearest tenth = 1 decimal place
- Rounding to the nearest hundredth = 2 decimal places
- Rounding to the nearest thousandth = 3 decimal places
- Rounding to the nearest ten thousandth = 4 decimal places

In Statistics the Basic Rounding Rule is that when computations are done in the calculation, rounding should not be done until the final answer is calculated. When rounding is done in the intermediate steps, it tends to increase the difference between the answer and the exact one. But in class and the textbook, it is not always practical to show long decimals in the intermediate calculations; hence, the values in the examples are carried out to enough places (usually three or four) to obtain the same answer that a calculator would give after rounding on the last step.

Rounding in MyStatLab
Pay close attention to any rounding instructions given in the problem. Unless otherwise instructed, always use the most precise numbers possible when calculating your answer, and then round only the final answer to the specified number of decimal places.

If a problem requires you to round before the final answer or if there are a few different ways to solve a problem, there may be multiple answers that are close to each other, that are all considered correct. Sometimes there will be several particular answers that are accepted, and sometimes answers that are within a certain range will be accepted. Try to maintain as much precision as possible when calculating rounded answers.