Decimals
Place Value and Rounding

A decimal has three parts:

12.675

The Whole
Number Part

The Decimal
Point

The Decimal
Part
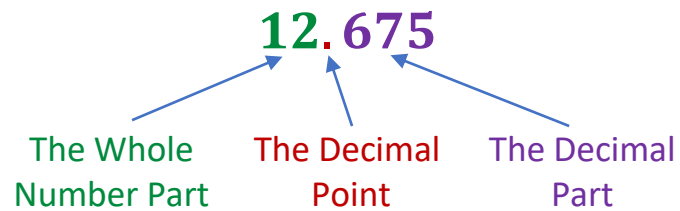
Place Value for Decimals

Billions,	Hundred-Millions	Ten-Millions	Millions,	Hundred-Thousands	Ten-Thousands	Thousands,	Hundreds	Tens	Ones (or Units)	•	Tenths	Hundredths	Thousandths	Ten-Thousandths	Hundred-Thousandths	Millionths	Ten-Millionths	Hundred-Millionths	Billionths	Ones (or Units)

The Rules for Rounding Decimals

1. Identify the place of the digit to be rounded.
2. Look at the digit to the right of that place.
   - If that digit is **5 or greater**, **add 1** to the digit to be rounded, and drop all the digits to its right.
   - If that digit is **less than 5**, **do not change** the digit to be rounded, and drop all the digits to its right.

Examples of Rounding Decimals

Round 3.284 to the nearest tenth.

Solution

The tenths digit is 2.
The digit to the right is 8 (it is more than 5).
Add 1 to 2 and and drop all the digits to the right.

$$3.284 \approx 3.3$$

Round 25.32167 to the nearest thousandth.

Solution

The thousandths digit is 1.
The digit to the right is 6 (it is more than 5).
Add 1 to 1 and and drop all the digits to the right.

$$25.32167 \approx 25.322$$

Round 0.842 to the nearest hundredth.

Solution

The hundredths digit is 4.
The digit to the right is 2 (it is less than 5).
Do not change 4 and drop all the digits to the right.

$$0.842 \approx 0.84$$