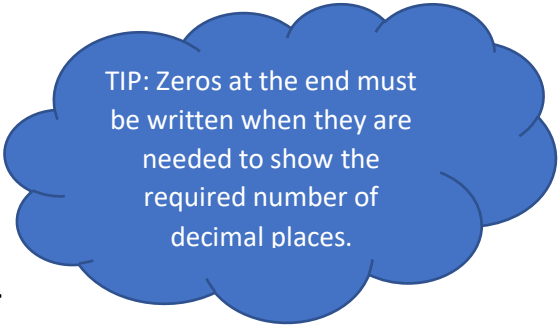




TIP: Zeros at the end must be written when they are needed to show the required number of decimal places.

Rounding to Decimal Places

Decimal places count the digits after the decimal point.

Example: 64.839906

Nearest Whole Number

The units digit is 4. Look at the next digit, which is 8. Since 8 is greater than or equal to 5, round the 4 up: $64.839906 = 65$

1 Decimal Place

The first decimal digit is 8. Look at the next digit, 3. Since 3 is less than 5, the 8 remains unchanged: $64.839906 = 64.8$

3 Decimal Places

The third decimal digit is 9. Look at the next digit, which is also 9. Since 9 is greater than 5, round up. Because 9 becomes 10, the 1 is carried to the previous decimal digit: $64.839906 = 64.840$

Rounding to Significant Figures

Significant figures count meaningful digits starting from the first non-zero digit when reading from left to right. For example: 64.839906 The significant digits are: 64.839906 So:

- 6 is the 1st significant figure
- 4 is the 2nd significant figure
- 8 is the 3rd significant figure
- 3 is the 4th significant figure

Process for Significant Figures

1. Find the first non-zero digit.
2. Count from left to right until you reach the required number of significant figures.
3. Look at the next digit.
4. If it is 5–9, round up.

5. If it is 0–4, leave the rounding digit unchanged.
6. Replace the remaining digits with zeros if necessary.

Example

Round: 64.839906 to 3 significant figures.

The first three significant figures are: 6, 4, 8

The next digit is 3, so the 8 remains unchanged.

Therefore: $64.839906 = 64.8$

Example with a Whole Number

Round: 58372 to 3 significant figures.

The first three significant figures are: 5, 8, 3

The next digit is 7, so round 3 up to 4: $58372 = 58400$

Zeros are used as place holders to maintain the size of the number.

Important Comparison: Decimal Places vs Significant Figures

Example: 64.839906

Requirement	Answer
Nearest whole number	65
1 decimal place	64.8
3 decimal places	64.840
3 significant figures	64.8
4 significant figures	64.84

- Decimal places are counted from the decimal point.
- Significant figures are counted from the first non-zero digit.