

# Notes & Steps



## Key idea

Rounding gives a simpler number that is close to the original. We round to a specific decimal place by looking at the next digit to the right.

## Steps

1. Find the decimal place you are rounding to.
2. Look at the digit immediately to the right.
3. If that digit is 5 or more, round up. If it is 4 or less, round down.
4. Drop all digits to the right of the rounding place.

## Common mistake

When the digit to round is a 9, rounding up can change the whole number. For example, 2.97 to 1 d.p. rounds to 3.0, not 2.10.

## Rounding reminder

- ▶ Round 3.4 to nearest whole: look at 4 (tenths).  $4 < 5$ , so 3.
- ▶ Round 7.6 to nearest whole: look at 6 (tenths).  $6 \geq 5$ , so 8.
- ▶ Round 2.31 to 1 d.p.: look at 1 (hundredths).  $1 < 5$ , so 2.3.
- ▶ Round 5.68 to 1 d.p.: look at 8 (hundredths).  $8 \geq 5$ , so 5.7.

## Try these

1. Round 4.86 to 1 decimal place.
2. Round 1.73 to 1 decimal place.
3. Round 6.15 to 1 decimal place.

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## Example 1: round to 1 d.p.

Round 8.42 to 1 decimal place.

8.42

The rounding digit is 4 (tenths). Look right at 2 (hundredths).  $2 < 5$ , so the 4 stays. Answer: 8.4.

## Example 2: round to 2 d.p.

Round 3.141 to 2 decimal places.

3.141

The rounding digit is 4 (hundredths). Look right at 1 (thousandths).  $1 < 5$ , so the 4 stays. Answer: 3.14.

## Try these

1. Round 5.678 to 2 decimal places.
2. Round 7.204 to 2 decimal places.
3. Round 9.995 to 2 decimal places.

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## Example 3: 9 rolling over

Round 2.97 to 1 decimal place.

2.97

The rounding digit is 9 (tenths). Look right at 7 (hundredths).  $7 \geq 5$ , so we need to round the 9 up. 9 rounds to 10, which carries into the units: 3.0. Answer: 3.0.

## Example 4: 2 d.p. with 9

Round 4.995 to 2 decimal places.

4.995

The rounding digit is 9 (hundredths). Look right at 5 (thousandths).  $5 \geq 5$ , so round the 9 up. 9 becomes 10, carries: 5.00. Answer: 5.00.

## Common mistake

Forgetting to show the zero after rounding. For example, 3.0 is correct for 2.97 to 1 d.p. If you write just 3, you have rounded to a whole number, not 1 decimal place.