

Rounding

Starter

1. **(Review of Y7 material)** Round 72.985 to: (a) 1 d.p. (b) 2 d.p.
N.B. Click [here](#) for a reminder on rounding to a specified number of decimal places
2. **(Review of Y7 material)** An answer has been given as 3.10. Has it been rounded to 1 d.p. or 2 d.p.?

Notes

Significant figures

The first significant figure is the **first non-zero digit, reading from left to right.**

N.B. Zero cannot be the first significant figure.

E.g. 1 Identify the 1st and 2nd significant figures for: (a) 608.57 (b) 0.040780

Working: (a) 608.57 1st significant figure is 6
2nd significant figure is 0

Success criteria – rounding to significant figures

1. Locate the number of significant figures — draw a dotted line just to the right.
2. Look at the digit to the right of the dotted line — does it cause the digit to round up?
3. The digits **to the right of the dotted line:** either
Become 0s if they are before the decimal point.
Disappear if they are after the decimal point.

E.g. 2 Round these numbers to 1 s.f.: (a) 73981 (b) 0.73981 (c) 739.81

Working: (a) 1 s.f. so draw a dotted line to the right of the 1st s.f.: 7 : 3981
Look at the digit to the right of the dotted line: 3
Does the 3 cause the 7 to round up? No, so 7 stays as it is.
The digits to the right of the dotted line become zeros because they are before the decimal point
73981 becomes 70000

(b) 1 s.f. so draw a dotted line to the right of the 1st s.f.: 0.7 : 3981
Look at the digit to the right of the dotted line: 3
Does the 3 cause the 7 to round up? No, so 7 stays as it is.
The digits to the right of the dotted line disappear because they are after the decimal point.
0.73981 becomes 0.7

Remember Non-significant digits **before** the decimal point → **zeros**.
Non-significant digits **after** the decimal point → **disappear**.

E.g. 3 Discuss with a partner whether the following are true or false:

- (a) 0.0059283 rounded to 4 s.f. is 0.0059
 - (b) 764 rounded to 2 s.f. is 76
 - (c) 0.004037 rounded to 2 sf is 0.00403
 - (d) A zero after the first non-zero digit is a significant figure.
- Give reasons for your answer.

E.g. 4 Round: (a) 0.01642 to 2 s.f. (b) 98137 to 4 s.f. (c) 0.0400923 to 3 sf

E.g. 5 Complete these statements:

- (a) Rounding 39.285 to 1 d.p. is the same as rounding to ...
- (b) Rounding 1.5794 to 3 s.f. is the same as rounding to ...
- (c) Rounding 1543 to 2 s.f. is the same as rounding to ...

Working: (a) 3 significant figures

Video: [Rounding - decimals places](#)
Video: [Rounding - significant figures](#)

[Solutions to Starter and E.g.s](#)

Exercise

p72 Ex 4.5 Qu 1-4, 6 decimal places

p72 Ex 4.5 Qu 5, 7-10 significant figures

Summary

The first significant figure is the *first non-zero digit, reading from left to right.*

N.B. Zero cannot be the first significant figure.

Rounding to significant figures

1. Locate the number of significant figures — draw a dotted line just to the right.
2. Look at the digit to the right of the dotted line — does it cause the digit to round up?
3. The digits **to the right of the dotted line:** either
 - Become 0s if they are before the decimal place.
 - Disappear if they are after the decimal point.

[Textbook answers \(only available during a lockdown\)](#)