

N.B. The calculation must be able to be done in your head i.e. no calculators.
When estimating use the approximation symbol, \approx , rather than the equals, $=$, symbol.
Calculation \approx Estimation = Answer
Each number does not need to be rounded to the same accuracy — but one significant figure is a good guide.

Estimating

E.g. 3 Estimate the value of:

(a) 102.2×4.2 (b) $494.27 \div 5.05$

(c) $\frac{9.7 \times 326}{27.9 - 8.4}$ (d) $\frac{\frac{5}{6} \text{ of } 50}{3.8^2}$

Working: (a) $102.2 \times 4.2 \approx 100 \times 4 = 400$

E.g. 4 There are 491 cinemas in the UK and every day about 810 people visit each one. Based on a UK population of 60 million, a film magazine said: “Every day, over 0.6% of British people go to the cinema.” Without using a calculator, decide whether the magazine report is fair? Showing the working you did to decide.

Video: [Approximating calculations](#)

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

Exercise

9-1 class textbook: p7 M1.3 Qu 5-8
A*-G class textbook: No exercise
9-1 homework book: p2 M1.3 Qu 2
A*-G homework book: No exercise

Summary

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.

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:**
Become 0s if they are before the decimal place.
Disappear if they are after the decimal point.

Estimating — **round** each number to **one significant figure** then mentally do the calculation.