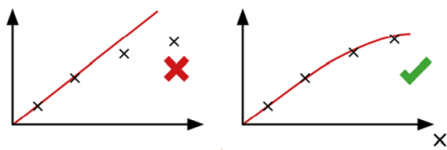# Essential Maths In Science
for GCSE & A level

Exam hints for students from OCR

0.34564524 ✔
0.346 ✘

It's always more accurate to round once, for the final answer, and work with unrounded values on the calculator.

Lines of best fit can be straight or curved. They don't have to extend to the axes or origin if not appropriate.

$\frac{4.10}{202} = 0.0203$ mol $\frac{4.91}{94} = 0.0522$ mol

percentage yield = 38.89 % ✔   ECF

Show clear working for calculations. Error carried forward may mean a response still gains marks if a mistake is made.
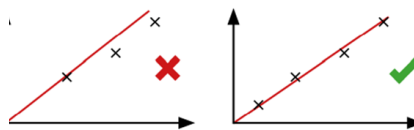
Mass = 82.7 g
Titre = 24.35 cm³   3 s.f.

The 'appropriate number of significant figures' is the lowest number of significant figures provided in the data.

Give your answer to two significant figures.
Answer: ...25 cm³... ✔

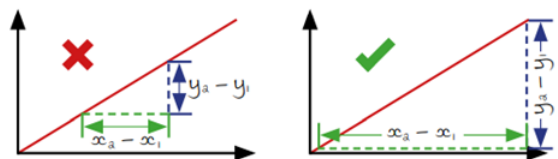Make sure you give answers to the number of significant figures in the question after performing calculations.

Lines of best fit should cover all points and have a fair distribution of points above and below the line.
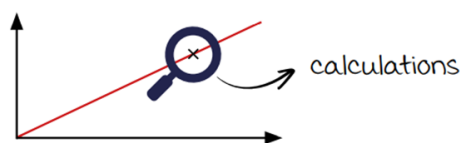
Answer: ....65000..............
Answer: ....6.5×10^4..............

You need to be able to convert results between decimal form and standard form (e.g. $a \times 10^n$).

$y_a - y_i$ $x_a - x_i$

Triangles for gradient calculation should be as large as possible - too small a triangle gives a larger error in the value.

calculations
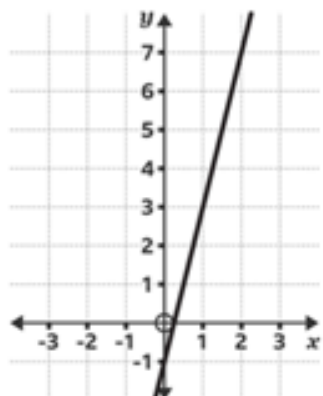
Read the scales on graphs carefully and check any reading is correct before using it in subsequent calculations.

Find:

1. (3.493 +12.4567) x 3
     to 3 sig. figs

2. Draw the line of best fit and
   estimate height at 148cm
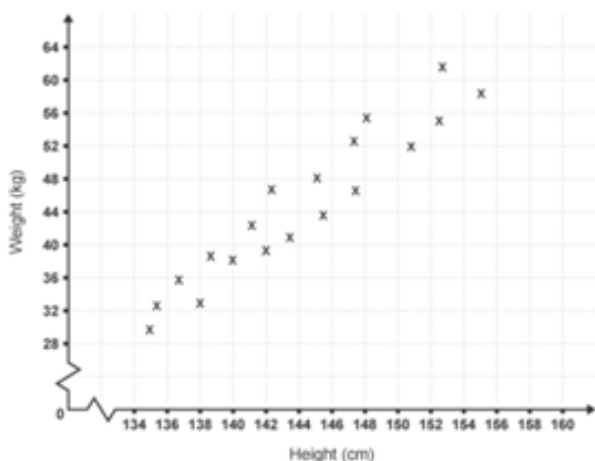
3. Calculate 12.50 x 2.1234 to
   an appropriate number of
       sig. figs.

4. Convert 457638321 to
   standard form and 5 sig figs.

5. Work out the gradient of
the line:

Find:

1. (3.493 +12.4567) x 3
   to 3 sig. figs

Answers:

1. 374000

2. Draw the line of best fit and estimate height at 148cm

2. There will be some variability when drawn by eye
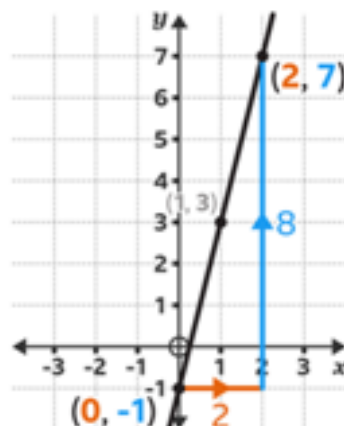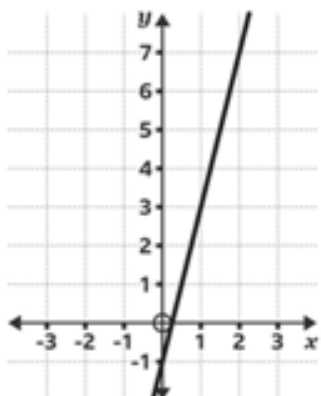

3. Calculate 12.50 x 2.1234 to an appropriate number of sig. figs.

3. 26.54

4. Convert 457638321 to standard form and 5 sig. figs.

4. 4.5764×10^8

5. Work out the gradient of the line:

5.

(2, 7)

(1, 3)

8

$8 \div 2 = 4$
gradient = 4

(0, -1)

2