Calculator methods

- Using a calculator for powers and roots
- Checking answers for correct order of magnitude
- Rounding answers appropriately
- Using a calculator for converting currencies and units of measurement

Keywords

You should know

explanation 1a | explanation 1b | explanation 1c | explanation 1d | online

1 Work these out using a calculator. Round your final answer to 2 decimal places.

a $\dfrac{13.2 - 2.1}{4.5}$ **b** $\dfrac{6.8 + 7.3}{1.2}$ **c** $\dfrac{4.7 \times 2.8}{10.3}$

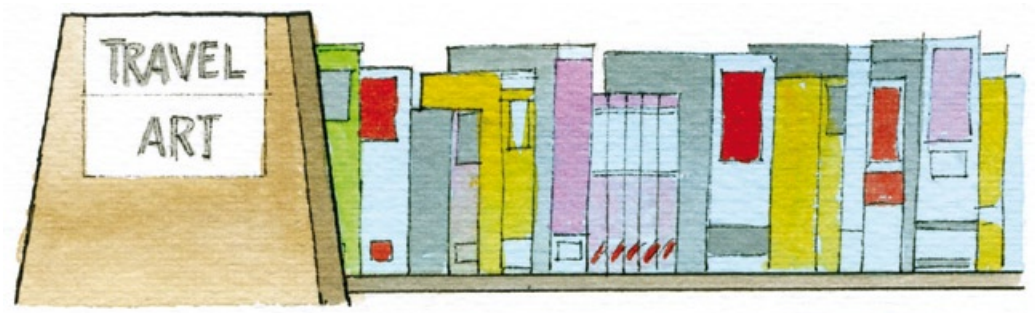
d $\dfrac{14.7 - 5.1}{7.6}$ **e** $\dfrac{8.2 \times 4.06}{0.89^3}$ **f** $\dfrac{8.98^2 \times 5.07}{2.36^2}$

g $\dfrac{8.1 + 5.4}{3.6 - 1.2^2}$ **h** $\dfrac{9.4^3 - 6.08}{10.7^2 - 5.36}$ **i** $\dfrac{8.34 + 5.87^2}{11.98 - 8.09}$

j $\dfrac{5.6^2 + 9.4^3}{7.5^4}$ **k** $(10.4 - 8.2^3) \times 0.5^3$ **l** $(12.7^2 + 14.8^2) \div 4.5$

m $\dfrac{(452.4 - 901.2)^3}{(55.3)^4}$ **n** $(1002.4 - 1978.1)^2 \div 104$ **o** $\left(\dfrac{461}{97.2}\right)^5$

2 The travel section of a library contains 455 books.



a If the mean number of pages per book is 352.6, how many pages are there altogether in the travel section?

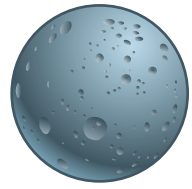
b The art section has 186 books with an average of 202.5 pages each.
How many more pages are there in the travel section than in the art section?

3 Ibrahim and Fatima are arguing about their answers to a maths problem.

The calculation they did was $\dfrac{16.8 + (101.2 - 79.3)}{2.1 + 0.5}$.

Ibrahim thinks the answer is 18.93 (2 d.p.) but Fatima thinks it is 14.88 (2 d.p.) Who is right and what did the other person do wrong?

4 The distance from the Earth to the Moon is about $9\frac{1}{2}$ times the circumference of the Earth. If the average radius of the Earth at the Equator is 6378.137 km, calculate the distance from the Earth to the Moon.



explanation 2 — online

5 Work these out using brackets on a calculator and round your answer to 3 d.p. Make sure you estimate the answer to check your calculation.

a $\sqrt{4.3 + 8.7}$ **b** $\sqrt{12.75 - 4.08}$ **c** $\sqrt{\dfrac{48}{21}}$

d $\sqrt{\dfrac{165}{12.8}}$ **e** $\sqrt{\dfrac{54.9}{91.3}}$ **f** $\dfrac{\sqrt{45.78}}{16}$

g $\dfrac{\sqrt{18.5 - 6.098}}{3.4^2}$ **h** $\sqrt{44} + \sqrt{89}$ **i** $\sqrt{25^2 - 24^2}$

6 When there are 6 hours in a school day, how many seconds are spent at school during a 5-week period? Write down the calculation you would do on your calculator and work out the exact answer.

explanation 3a explanation 3b

You will need these currency conversions for the next few questions.

£1 = 1.674 35 Swiss francs	£1 = 1.132 50 euros
£1 = 1.419 US dollars	£1 = 132.87 Japanese yen

7 **a** Change £30 into US dollars.

b Change £45 into euros.

c Change 56 euros into pounds.

d Change £478.90 into Japanese yen.

e Change £89.54 into US dollars.

f Change US$5400 into pounds.

g Change 500 Japanese yen into pounds.

h Change 4500 Swiss francs into pounds.

i Change £5689.50 into Swiss francs.

j Change 458 904 Japanese yen into pounds.

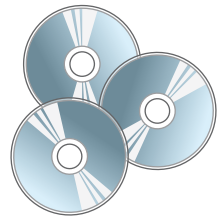
8 On holiday in the Swiss Alps, Fred enjoyed a cable car ride to the top of a mountain and lunch in a café. His cable car journey cost 32 Swiss francs and the café bill came to 14.50 Swiss francs. He also bought two postcards costing 0.45 Swiss francs each. How much did he spend in pounds sterling?

9 **a** How many euros could you buy for £100, assuming there are no other charges?

b If you have to pay 3% to the exchange company, how many euros could you buy?

10 In Japan, a hotel charges 10 000 yen per night plus 2110 yen for breakfast each day. There is a service charge of 15% added to the total bill.
What is the cost in pounds of a five-day stay with breakfast daily in this hotel?

11 CDs in a music store in the USA cost $12.99 each, or 5 for $50.



a If you have £60 to spend, how many CDs could you buy?

b How much change would you have in US dollars?

explanation 4

12 An A4 sheet of paper is 297 mm long.

A class is making a mural for one wall of their classroom.
How many whole sheets would fit along a 4 m long wall?

13 Use the conversion $\frac{5}{8}$ mile = 1 kilometre.

During her holiday in Germany, Tara drove a total of 1230 km.
810 km was on motorways and the rest was on country roads.

a Find, in miles, the distance she travelled on country roads.

b Find the percentage of her journey that was driven on motorways.
Round sensibly.

14 The petrol consumption rate of Ailsa's car is 8.3 miles per litre.

a What distance could Ailsa travel with 28 litres in her tank?

b Ailsa drove 110 miles to see her grandmother.
How many litres of petrol did her car use?

c Ailsa's friend from New Zealand asked her how far 110 miles was in kilometres. Use the conversion 1 mile ≈ 1.609 kilometres to work out what answer Ailsa should give.

15 Tim drove a total of 371 miles in 8.2 hours. What was his average speed in kilometres per hour? Use 1 mile ≈ 1.609 kilometres.

16 A cake recipe requires 8 ounces of flour, 6 ounces of sugar, 2 ounces of cocoa powder, 5 ounces of margarine and 4 eggs. Write out the equivalent recipe in grams. Give the amounts to a suitable degree of accuracy. Use 1 ounce = 28.4 g.