Written methods

- Written methods for adding, subtracting, multiplying and dividing decimals

Keywords

You should know

Unless stated otherwise, no calculators should be used in this topic.

explanation 1

1 Work out these additions.

a 25.1 + 13.6 **b** 126.2 + 31 **c** 826.4 + 3.9

d 431.8 + 9.25 **e** 34.9 + 3.06 **f** 459.7 + 28.36

g 69 + 837.26 **h** 0.38 + 640.9 **i** 0.279 + 12.83 + 59

2 Work these out.

a 42.2 + 3.4 + 18.2 **b** 12.9 + 8.3 + 18

c 102.37 + 19.62 + 0.04 **d** 1312 + 106.04 + 13.1

e 1406.7 + 19.38 + 1.063 **f** 26.9 + 0.1 + 127.329 + 3.88

explanation 2a explanation 2b online

3 Work out these subtractions.

a 48.3 − 26.1 **b** 98.7 − 13.7 **c** 68.2 − 46.3

d 142.8 − 17.4 **e** 826.5 − 7.9 **f** 312.4 − 286.7

g 319.07 − 4.4 **h** 382.06 − 291.77 **i** 6 − 0.5732

4 Work these out.

a 412.98 − 12.3 − 2.04 **b** 308.64 − 14.11 − 19.01

c 901.3 − 312.4 − 27.01 **d** 38.7 + 123.9 − 3.04

e 67.4 + 33.12 − 91.3 + 48.04 **f** 104 − 3.06 + 72.7 − 81.926

5 **a** The heights of three pupils are 1.80 m, 1.76 m and 1.69 m.

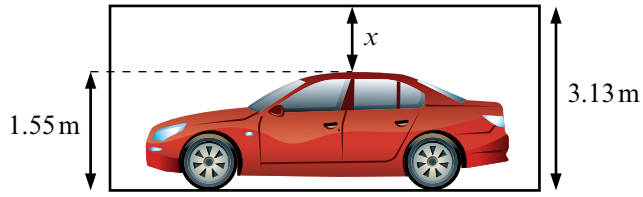
Calculate the combined height of the three pupils.

b Four apples have masses of 0.15 kg, 0.136 kg, 0.098 kg and 0.127 kg.

Calculate their total mass.

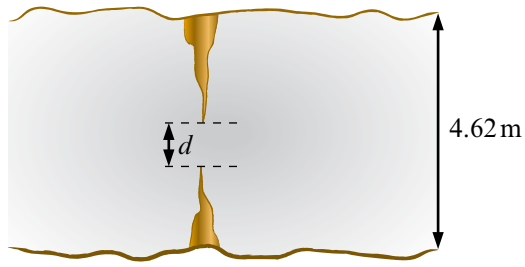
c A car is parked in a garage with dimensions as shown.

Calculate the value of x.



d A cave is 4.62 m tall. A stalactite growing down from the ceiling is 1.38 m long, whilst a stalagmite directly below it, is 0.87 m tall.

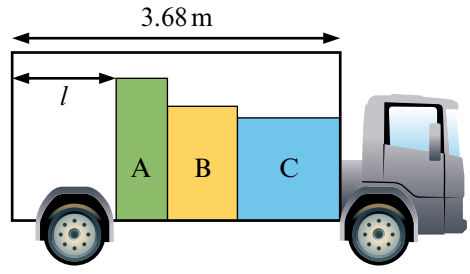
Calculate the distance, d, between them.



e Three crates A, B and C are arranged in the back of a lorry 3.68 m long as shown.

Crate A is 0.2 m long, crate B is 0.86 m long and crate C is 1.05 m long.

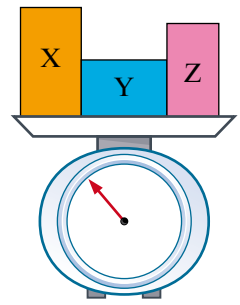
Calculate the remaining length, l.



f Three packets X, Y and Z are weighed at the post office. Their combined mass is 12.63 kg.

Y has a mass of 2.2 kg and Z has a mass of 6.49 kg.

Calculate the mass of packet X.



explanation 3a | explanation 3b | online

6 For each calculation

i estimate the answer

ii without a calculator, work out the answer

a 32×2.5 **b** 820×4.1 **c** 98×4.7

d 125×3.62 **e** 178×12.4 **f** 168×14.6

g 24.4×6.8 **h** 34.4×28.3 **i** 126.1×2.04

7 **a** 56.4 g of cake mix is used to make a small cake.
How much cake mix is used to make 62 cakes?

b The cost of a pencil is £0.18, calculate the cost of buying 86 pencils.

c A magazine costs £2.42 per month.
Calculate the cost of a year's subscription.

d A rectangular garden is 23.4 m long and 8.7 m wide. Calculate its area.

explanation 4a | explanation 4b | explanation 4c | online

8 Work these out.

a $92.8 \div 16$ **b** $178.2 \div 22$ **c** $223.2 \div 24$

d $225.6 \div 48$ **e** $38.72 \div 32$ **f** $5.661 \div 37$

9 Write down a three-digit number then write it down again to make a six-digit number.
Divide the six-digit number by 7,
then by 11 and then by 13.
What do you notice about your answer?
Explain why this happens.

Working out $7 \times 11 \times 13$ might help you.

10 Work out the answers to the following divisions.

a $32 \div 0.8$ **b** $3.64 \div 0.7$ **c** $153 \div 0.6$

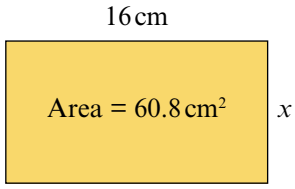
d $0.345 \div 0.05$ **e** $31.14 \div 0.9$ **f** $0.739 \div 0.02$

g $531 \div 0.03$ **h** $0.741 \div 0.05$ **i** $4.36 \div 0.08$

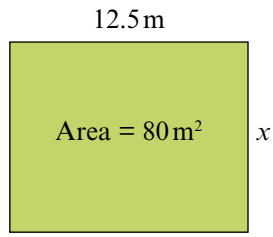
j $63.9 \div 1.5$ **k** $0.245 \div 0.14$ **l** $268.38 \div 6.3$

11 The area of each shape is given. Calculate the unknown lengths.

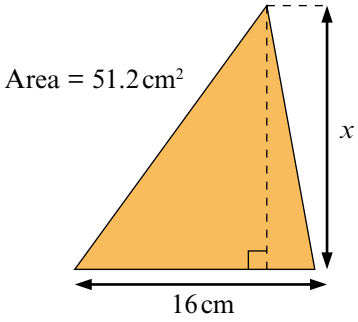
a



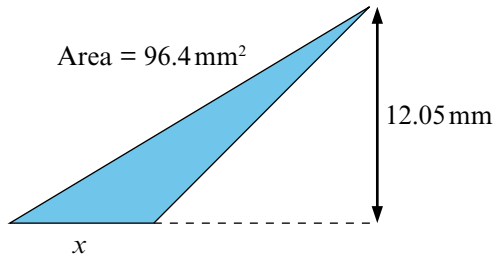
b



c



d



12 Use division to write these fractions as decimals.

a $\frac{5}{16}$ **b** $\frac{11}{16}$ **c** $\frac{9}{25}$

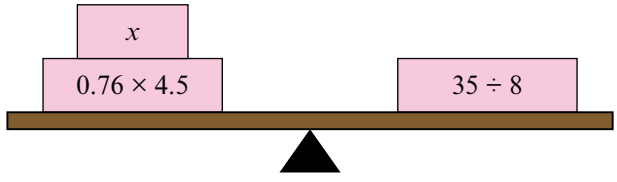
d $\frac{7}{8}$ **e** $\frac{17}{40}$ **f** $\frac{21}{32}$

13 Write these in order of size, smallest first. Show your method.

a 58%, $\frac{23}{40}$, $\frac{9}{16}$, 0.57 **b** 0.31, $\frac{8}{25}$, $\frac{9}{32}$, 30.7%

14 Find the value of x to make these scales balance.

a



b