

3.5 Dividing decimals

When you divide an integer or a decimal number by a single-digit number, it may not divide exactly. Then you will need to continue the division to a given number of decimal places. When you do this make sure that you work out the answer to one decimal place more than you are asked for, then round your answer to the appropriate degree of accuracy.

Worked example 3.5

- a Work out $68 \div 7$. Give your answer correct to one decimal place.
 b Work out $2.35 \div 4$. Give your answer correct to two decimal places.

a

$$\begin{array}{r} 7 \overline{)68.00} \\ \end{array}$$

$$\begin{array}{r} 9. \\ 7 \overline{)68.500} \\ \end{array}$$

$$\begin{array}{r} 9.71 \\ 7 \overline{)68.5010} \\ \end{array}$$

$$68 \div 7 = 9.7 \text{ (1 d.p.)}$$

You are asked to give your answer to one decimal place, so you need to work out the answer to two decimal places first. Write 68 as 68.00.

$6 \div 7$ can't be done, so work out $68 \div 7 = 9$ remainder 5.

Write down the 9 and carry the 5.

Now work out $50 \div 7 = 7$ remainder 1. Write down the 7 and carry the 1.

Now work out $10 \div 7 = 1$ remainder 3. Write down the 1 and stop.

In the answer 9.71, the number after the 7 is a 1, so the 7 stays the same.

The answer is 9.7 correct to one decimal place (1 d.p.).

b

$$\begin{array}{r} 4 \overline{)2.350} \\ \end{array}$$

$$\begin{array}{r} 0.5 \\ 4 \overline{)2.350} \\ \end{array}$$

$$\begin{array}{r} 0.587 \\ 4 \overline{)2.3530} \\ \end{array}$$

$$2.35 \div 4 = 0.59 \text{ (2 d.p.)}$$

You are asked to give your answer to two decimal places, so you need to work out the answer to three decimal places first. Write 2.35 as 2.350.

$2 \div 4$ can't be done, so write 0 above the 2 then work out

$23 \div 4 = 5$ remainder 3. Write down the 5 and carry the 3.

Now work out $35 \div 4 = 8$ remainder 3. Write down the 8 and carry the 3.

Now work out $30 \div 4 = 7$ remainder 2. Write down the 7 and stop.

The number after the 8 in the answer 0.587 is a 7, so round the 8 up to 9.

The answer is 0.59 correct to two decimal places (2 d.p.).

Exercise 3.5

- 1 Work out these divisions. Give your answers correct to one decimal place.

a $89 \div 3$

b $92 \div 7$

c $56 \div 6$

d $65 \div 8$

e $879 \div 7$

f $592 \div 3$

g $145 \div 9$

h $275 \div 3$

- 2 Work out these divisions. Give your answers correct to two decimal places.

a $5.65 \div 3$

b $7.29 \div 4$

c $1.98 \div 8$

d $0.95 \div 7$

e $7.6 \div 6$

f $4.3 \div 3$

g $1.9 \div 7$

h $0.7 \div 3$

- 3 In an experiment a scientist mixes together three substances. She mixes 18.42 g of substance A, 5.8 g of substance B and 0.75 g of substance C. Then she divides the mixture equally into four containers.

What is the mass of the mixture in each container?

Give your answer correct to two decimal places.

