


Exercise 3.1

- 1 Write the following in: **i** numbers **ii** words.
a 10^3 **b** 10^5 **c** 10^7 **d** 10^1

- 2 Write each number as a power of 10.
a 100 **b** 10 000 000 **c** 10 000 **d** 10 000 000 000

- 3 Work these out.
a 62×0.1 **b** 50×0.1 **c** 125×0.1 **d** 3.2×0.1
e 37×0.01 **f** 600×0.01 **g** 750×0.01 **h** 4×0.01

- 4 Work these out.
a $7 \div 0.1$ **b** $4.5 \div 0.1$ **c** $52.2 \div 0.1$ **d** $0.67 \div 0.1$
e $2 \div 0.01$ **f** $8.5 \div 0.01$ **g** $0.32 \div 0.01$ **h** $7.225 \div 0.01$

-  5 Jake works out 23×0.1 and $8.3 \div 0.01$.
 He checks his answers by using an inverse operation.

Work out the answers to these questions.
 Check your answers by using inverse operations.

- a** 18×0.1 **b** 23.6×0.01
c $0.6 \div 0.1$ **d** $4.5 \div 0.01$

1. $23 \times 0.1 = 23 \div 10 = 2.3$
 Check: $2.3 \times 10 = 23 \checkmark$
 2. $8.3 \div 0.01 = 8.3 \times 100 = 8300$
 Check: $8300 \div 100 = 83 \times$
 Correct answer: 830

- 6 Which symbol, \times or \div , goes in each box?
a $6.7 \square 0.1 = 67$ **b** $4.5 \square 0.01 = 0.045$ **c** $0.9 \square 0.1 = 0.09$
d $550 \square 0.01 = 5.5$ **e** $0.23 \square 0.1 = 2.3$ **f** $12 \square 0.01 = 1200$

- 7 Which of 0.1 or 0.01 goes in each box?
a $26 \times \square = 0.26$ **b** $3.4 \div \square = 34$ **c** $0.06 \times \square = 0.0006$
d $7 \div \square = 70$ **e** $8.99 \times \square = 0.899$ **f** $52 \div \square = 520$


- 8 Which calculation, **A**, **B**, **C** or **D**, gives a different answer from the others? Show your working.

A 5.2×0.1

B $52 \div 0.01$

C $0.052 \div 0.1$

D 52×0.01

-  9 Razi thinks of a number. He multiplies his number by 0.1, and then divides the answer by 0.01. He then divides this answer by 0.1 and gets a final answer of 12 500. What number does Razi think of first?

-  10 This is part of Harsha's homework.

Question Write down one example to show that this statement is not true.
 'When you multiply a number with one decimal place by 0.01 you will always get an answer that is smaller than zero.'

Answer $345.8 \times 0.01 = 3.458$ and 3.458 is not smaller than zero so the statement is not true.

Write down one example to show that each of these statements is not true.

- a** When you multiply a number other than zero by 0.1 you will always get an answer that is greater than zero.
b When you divide a number with one decimal place by 0.01 you will always get an answer that is greater than 100.

Worked example 3.1b

Work out the answer to each of these.

a 32×0.1

b 4.2×0.01

c $6 \div 0.1$

d $4.156 \div 0.01$

a $32 \times 0.1 = 3.2$

Multiplying by 0.1 is the same as dividing by 10, and $32 \div 10 = 3.2$.

b $4.2 \times 0.01 = 0.042$

Multiplying by 0.01 is the same as dividing by 100, and $4.2 \div 100 = 0.042$.

c $6 \div 0.1 = 60$

Dividing by 0.1 is the same as multiplying by 10, and $6 \times 10 = 60$.

d $4.156 \div 0.01 = 415.6$

Dividing by 0.01 is the same as multiplying by 100, and $4.156 \times 100 = 415.6$.