



Division with large and small numbers

Year 7 About 75 minutes No calculator 47 marks

Date _____

A Do Now

Quick questions to start.

- A1** Last lesson [1 mark]

Work out 0.6×0.07 .

A2 Needed today [1 mark]

Work out $4.8 \div 6$.

Answer

Answer

- A3** Needed today [1 mark]

Work out $270 \div 9$.

A4 From chapter 10 [1 mark]

Work out $5a - b$ when $a = 3$ and $b = 4$.

Answer

Answer

B Example, then your turn

Year 7

Your teacher works through each example with you. Then try the one beside it.

EXAMPLE 1

Work out (a) $36 \div 0.4$ (b) $15 \div 0.03$.

Hint Multiply both numbers by 10 or 100 until you divide by a whole number. The answer does not change.

- B1** Work out each one. [3 marks]

- (a) $24 \div 0.6$
(b) $63 \div 0.09$
(c) $5 \div 0.2$

Answer (a) ... (b) ... (c) ...

EXAMPLE 2

Work out (a) $0.48 \div 60$ (b) $90 \div 3000$.

Hint Divide both numbers by 10, 100 or 1000 until you divide by a single digit.

- B2** Work out each one. [3 marks]

- (a) $0.35 \div 70$
(b) $42 \div 600$
(c) $8 \div 400$

Answer (a) ... (b) ... (c) ...

EXAMPLE 3

Work out (a) $2.4 \div 0.08$ (b) $0.56 \div 0.7$.

Hint Multiply both by 100 in (a) and by 10 in (b), so you divide by a whole number.

B3 Work out each one.

[2 marks]

(a) $3.6 \div 0.04$

(b) $0.81 \div 0.9$

Answer (a) (b)

EXAMPLE 4

A ribbon 7.5 m long is cut into pieces 0.25 m long. How many pieces are there?

Hint Work out $7.5 \div 0.25$. Multiply both by 100. Check your answer by multiplying.

B4 A jug holds 1.8 litres. How many glasses holding 0.15 litres each can it fill? Check your answer by multiplying.

[2 marks]

Answer glasses

c Practice

Year 7

C1 $391 \div 17 = 23$. Use this fact to work out [3 marks]

(a) $39.1 \div 17$

(b) $391 \div 1.7$

(c) $3.91 \div 0.17$

C2 Solve each equation. [2 marks]

(a) $0.5t = 14$

(b) $20x = 0.6$

Answer (a) $t = \dots$ (b) $x = \dots$

Answer (a) ... (b) ... (c) ...

C3 Which of these have the same answer as $12 \div 3$? [2 marks]

A $1.2 \div 0.3$ B $120 \div 0.3$

C $0.12 \div 0.03$ D $1.2 \div 3$

C4 Find each missing number. [2 marks]

(a) $4.5 \div \square = 90$

(b) $\square \div 0.3 = 70$

Answer (a) (b)

Answer

C5 $a = 1.2$, $b = 0.04$ and $c = 300$. [2 marks]

Work out

(a) $a \div b$

(b) $a \div c$

Answer (a) (b)

D Exam-style questions

GCSE Foundation

D1 Ava says, " $5 \div 0.5 = 2.5$, because dividing always makes a number smaller." [2 marks]

Ava is wrong. Explain why and give the correct answer.

D2 A water cooler holds 18 litres.

(a) How many cups holding 0.25 litres can be filled from the cooler? [2 marks]

Answer cups

(b) On Monday each person drinks 0.3 litres. The cooler is emptied. How many people drank from it? [2 marks]

Answer people

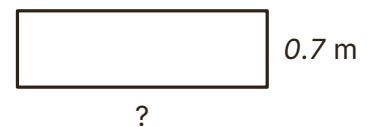
(c) The 18 litres cost £2.70. Work out the cost of 1 litre. [2 marks]

Answer £

Total for D2: 6 marks

D3 This rectangle has an area of 4.2 m^2 . Its width is 0.7 m .

(a) Work out its length. [2 marks]



Not drawn accurately

Answer m

(b) Work out its perimeter.

[2 marks]

Answer m

Total for D3: 4 marks

D4 Work out each of these. Then put them in order of size, smallest first.

[3 marks]

$$6 \div 0.3 \quad 0.6 \div 30 \quad 60 \div 0.03 \quad 0.06 \div 0.3$$

Answer , , ,

D5 A 0.4 kg bag of seeds costs £3.20. A 0.25 kg bag of the same seeds costs £2.10.

[3 marks]

Which bag is better value? Show your working.

E Extension

Stretch

No route is given. The hints are at the end of the sheet. Use one at a time.

E1 Put 0.2, 0.5, 4 and 20 in the boxes, one number in each box, to make the answer as big as possible. [4 marks]

$$\square \div \square + \square \div \square$$

What is the biggest answer?

Answer

Extension hints

Cover these with paper. Uncover one at a time.

E1 **Hint 1** Put big numbers on top of a division and small numbers underneath.

Hint 2 $20 \div 0.2 = 100$ is the biggest single division you can make.

Hint 3 Then compare $4 \div 0.5$ with $0.5 \div 4$.

How did it go?

Colour one circle on each line: not yet, nearly, yes.

I can divide by a decimal by first making it a whole number.



I can divide by a large number by making it a single digit.



I can use division with decimals to solve problems.

