

SECTION A

1	$2463 + 4230$

2	$56,684 + 3213$

3	$21,364 + 68,023$

SECTION B

1	$2684 + 9000$

2	$8406 + 1732$

3	$6394 + 63,453$

4	$27,328 + 61,407$

5	$2806 + 28,067$

6	$51,478 + 29,014$

SECTION C

1	$8674 + 24,187$

2	$26,287 + 34,964$

3	$324,698 + 438,024$

4	$243 + 4926 + 8103$

5	$9047 + 3524 + 87,441$

SECTION A

1 $7735 - 5203$

2 $65,534 - 3102$

3 $79,804 - 41,102$

SECTION B

1 $28,147 - 532$

2 $75,136 - 3052$

3 $84,237 - 51,152$

4 $68,372 - 5517$

5 $49,423 - 32,951$

6 $87,304 - 63,475$

SECTION C

1 $9431 - 5679$

2 $73,452 - 4258$

3 $81,326 - 33,648$

4 $94,136 - 55,878$

5 $275,321 - 157,489$

6 $134,124 - 45,687$

SECTION A

1

		3	3		
	x	1	2		

2

		2	2		
	x	1	4		

3

		1	2	2	
	x		2	4	

SECTION B

1

		5	3		
	x	3	1		

2

		3	4	1	
	x		2	8	

3

		1	5	7	
	x		4	3	

4

		5	3	0	
	x		3	1	

5

		7	0	6	
	x		8	1	

6

		2	0	8	
	x		4	2	

SECTION C

1

		6	4	2	
	x		4	7	

2

		3	9	6	
	x		8	2	

3

		8	7	2	
	x		5	9	

4

		3	7	8	
	x		5	7	

5

		4	3	9	
	x		7	4	

6

		7	2	9	
	x		6	7	

SECTION C

1

 $39 \overline{) 897}$

2

 $63 \overline{) 504}$

3

 $58 \overline{) 781}$

4

 $46 \overline{) 869}$

5

 $65 \overline{) 506}$

6

 $44 \overline{) 943}$

SECTION A

1 $\frac{1}{4} + \frac{1}{2}$

2 $\frac{2}{3} + \frac{1}{6}$

SECTION B - Write answers in lowest terms, as appropriate

1 $\frac{4}{9} + \frac{1}{3}$

2 $\frac{1}{3} + \frac{3}{12}$

3 $\frac{1}{6} + \frac{2}{3}$

4 $\frac{3}{5} + \frac{3}{15}$

SECTION C - Write answers in lowest terms and as mixed numbers, as appropriate

1 $\frac{2}{3} + \frac{1}{5}$

2 $\frac{2}{7} + \frac{2}{3}$

3 $\frac{3}{4} + \frac{5}{6}$

4 $\frac{1}{5} + \frac{1}{6} + \frac{1}{2}$

SECTION A

1 $3.2 + 4.6$

2 $5.7 + 2.2$

3 $4.5 + 3.2$

SECTION B

1 $6.4 + 5.2$

2 $8.7 + 4.65$

3 $4.62 + 8.43$

4 $18.6 + 24.7$

5 $3.28 + 38.9$

6 $27.6 + 9.48$

SECTION C

1 $2.387 + 48.24$

2 $476.3 + 780.9$

3 $498.3 + 23.916$

4 $104.5 + 98.74$

5 $8.436 + 598.7$

6 $3.2 + 88.46 + 29.8$

SECTION A**1** 50% of 70

2 10% of 350

3 10% of 6300

SECTION B**1** 25% of 436

2 20% of 2480

3 50% of 5030

4 25% of 492

5 30% x 3480

6 90% of 1970

SECTION C - Write remainders as a decimal fraction**1** 25% of 364

2 25% of 7.84

3 80% of 3028

4 85% x 7600

5 45% of 3620

6 75% x 3396

SECTION C

1 $(62 - 38)4 + 3$

2 $(540 - 52) \div 8 \times 3$

3 $73 + 208 - 8^2$

4 $(1.27 \times 2^2) \div 4$

5 $2 \times 3 + 12 \times 3$

6 $730 - 53 + (6^2 \div 9)$

1 $4 + 31(8 - 5)$

2 $(654 + 12) \div 9$

3 $264 + 82 - 11^2$

4 $(3^2 \times 11.4) \div 6$

5 $48 \div (13 - 3 + 2)$

6 $506 - 3 + (9^2 - 49)$

SECTION A

1 $5 + 8 - 2$

2 $13 + 6 - 2$

3 $24 \div 3 - 7$

SECTION B

1 $6 \times 7 + 16$

2 $(73 - 19) \div 9$

3 $387 - 4^2$

4 $90 - 25 \div 5$

5 $(53 + 27)7$

6 $5 + (63 - 36)3$

Round whole numbers to the nearest 1000

1 Round the following numbers to the nearest **1000**.

- a 1472 e 56,427
 b 8326 f 327,897
 c 4576 g 476,499
 d 17,876 h 1,872,384

2 Circle the numbers which round to **8000**.

8642

8473

7398

8416

7982

3 Complete the table below.

NUMBER	6472	8846	362	3738	827
NEAREST 1000	.....	.....	9000	.....	7000

4 For each of the numbers below, write the range of whole numbers which would round to it, as the nearest **1000**. An example is shown.

3000 **2500** to **3499**

a 6000 to

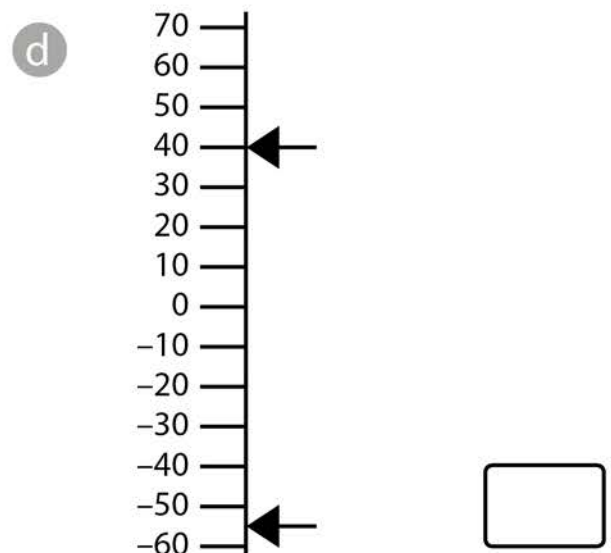
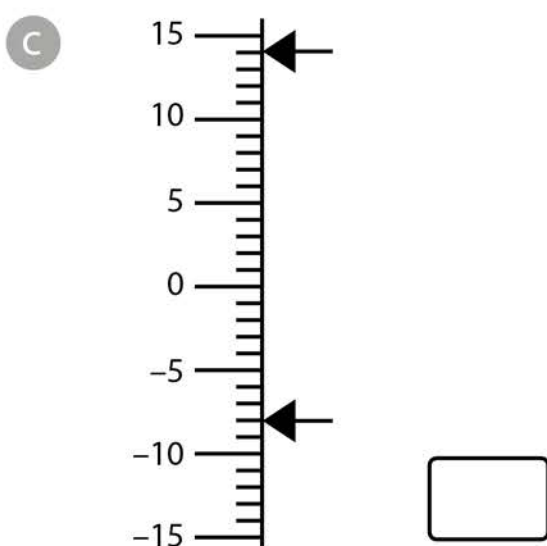
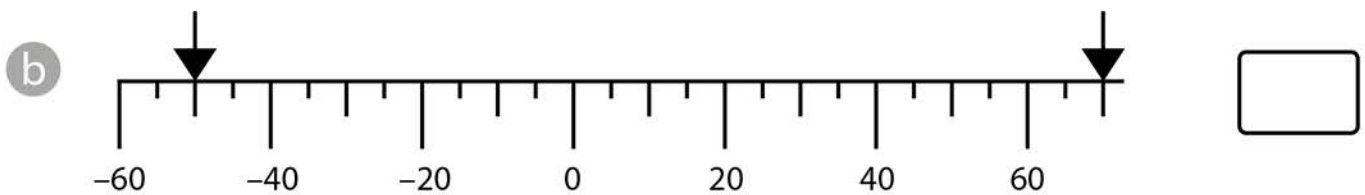
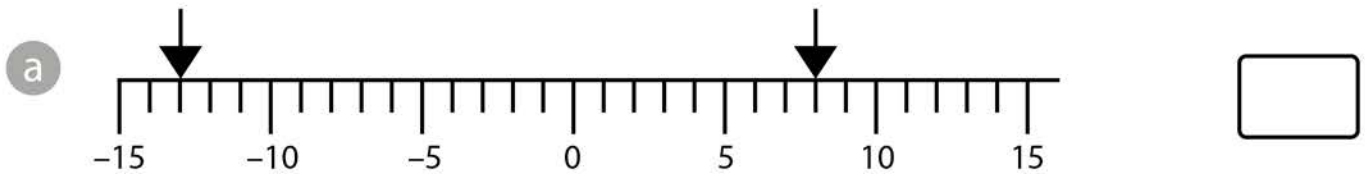
b 2000 to

c 9000 to



Calculate the difference between numbers across zero

- 1** What is the difference between the numbers shown by the 2 arrows on the number lines below?



- 2** Find the difference between the following pairs of numbers.

- a** -4 and 6 **c** 14 and -27
- b** 7 and -2 **d** -46 and 183



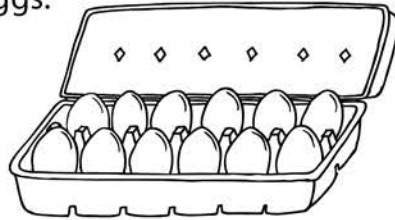
- 3** Solve the following.

- a** $-8 + 12 =$ **c** $148 - 183 =$
- b** $-11 + 17 =$ **d** $-56 + 177 =$



Divide numbers up to 4 digits by a two-digit whole number, using long division, and round its remainder up or down, as appropriate for the context

- 1 710 eggs were put into egg boxes holding 12 eggs. How many boxes were filled?

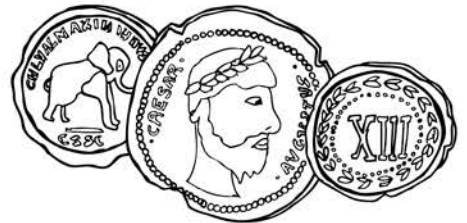


- 2 A coach can carry 34 passengers. How many coaches will be needed to carry 798 passengers?

- 3 Rashid had collected 1642 football stickers. He put them onto sheets with 24 stickers on each sheet. How many sheets had stickers on?

- 4 A group of archaeology students found 2647 old coins. Forty six coins could be packed in a box.

How many boxes were needed?



- 5 5427 people go to the stadium. There are 52 seats in each row. How many rows were full of people?

- 6 The chocolate factory makes 8426 chocolates. Twenty-seven chocolates fit in each bag. How many full bags of chocolates can be made?



Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

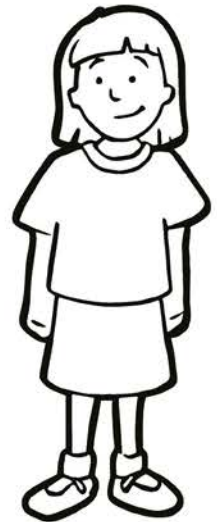
1 For each of the following, add the fractions by finding the lowest common denominator.

a $\frac{1}{3} + \frac{5}{6} = \frac{\boxed{}}{6} + \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{6}$

b $\frac{3}{4} + \frac{1}{8} = \frac{\boxed{}}{\boxed{}} + \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$

c $\frac{1}{4} + \frac{1}{3} + \frac{1}{2} = \frac{\boxed{}}{\boxed{}} + \frac{\boxed{}}{\boxed{}} + \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$

d $2\frac{3}{10} + 3\frac{1}{2} = \boxed{} + \boxed{} = \boxed{}$



2 Now try subtracting these fractions.

a $\frac{3}{4} - \frac{1}{3} = \frac{\boxed{}}{\boxed{}} - \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$

b $\frac{6}{7} - \frac{2}{3} = \frac{\boxed{}}{\boxed{}} - \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$

c $2\frac{3}{4} - 1\frac{5}{8} = \boxed{} - \boxed{} = \boxed{}$

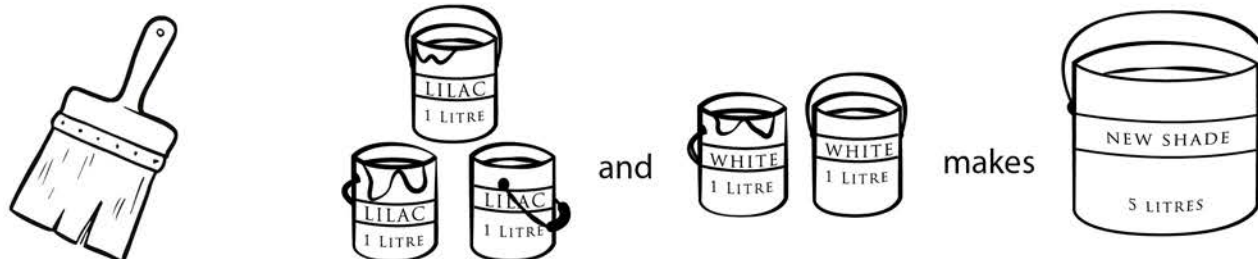


Solve problems involving the relative size of quantities using multiplication and division

- 1** In a packet there are **42** biscuits. There are **4** plain biscuits to every **2** chocolate. How many chocolate biscuits are in the packet?

- 2** Steph shares **20** sweets. She gives **4** sweets to Winston for every **1** she keeps. How many sweets does she give to Winston?

- 3** Deano, the decorator, is making a new shade of paint. He mixes lilac and white, as shown in the diagram, to get the new shade.



Next, Deano makes 15 litres of the new shade.
How many one litre tins of each colour does he use?

lilac and

white

- 4** There are **7** footballs to every **4** rugby balls. There are **28** rugby balls. How many balls are there in total?

- 5** Complete the table to show the amounts needed to make fruit juice for **4** and **9** people.

	Lemonade (ml)	Orange juice (ml)	Lime juice (ml)	Water (ml)
5 people	400	350	150	500
4 people				
9 people				

Find pairs of numbers that satisfy an equation with two unknowns

1 Find the missing values. Write your answer in the box.

a $\square = 23 + 56$

$\square = \triangle + 43$

$\triangle = \boxed{}$

b $\bigcirc = 14 \times 2$

$\bigcirc = \star + \star$

$\star = \boxed{}$

c $x = 9 \times 9$

$x = 47 + y$

$y = \boxed{}$

d $y = 49 + 26$

$y = 3a$

$a = \boxed{}$

e $56 \div b = 28$

$b + 481 = x$

$x = \boxed{}$

f $13y = 200 - 57$

$2y = 47 - x$

$x = \boxed{}$



2 Find the missing values in each of the following.

a $a + 17 = 46$

$4a = 79 + b$

$a = \boxed{}$

$b = \boxed{}$

b $\hexagon \times 17 = 272$

$\hexagon + \hexagon + \hexagon = 384 \div \bigcirc$

$\hexagon = \boxed{}$

$\bigcirc = \boxed{}$

c $x + x + 24 = 92$

$\frac{102}{x} = y + y + y$

$x = \boxed{}$

$y = \boxed{}$

Use simple formulae for area and volume

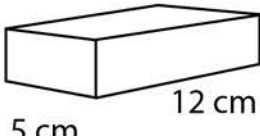
- 1 The formula to find the area of a rectangle is A (Area) = l (length) \times w (width). Use this to find the missing values in the table below.

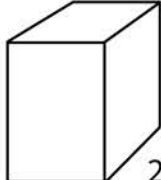
	l	w	A
Rectangle A	4 cm	5 cm	..... cm ²
Rectangle B	8 cm	9 cm	..... cm ²
Rectangle C	3 m	..... m	36 m ²
Rectangle D	..... mm	9 mm	117 mm ²
Rectangle E	2.5 m	..... m	45 m ²



- 2 Use the formula V (Volume) = $l \times w \times h$ (height) to find the volume of the cuboids.

Not to scale

a  $V =$ cm³

b  $V =$ m³

- 3 Use the formulae above to identify **two** possible sets of missing values (each side is a whole number).

- a Area = 16 cm²

$$16 \text{ cm}^2 = \boxed{} \text{ cm} \times \boxed{} \text{ cm} \text{ or } 16 \text{ cm}^2 = \boxed{} \text{ cm} \times \boxed{} \text{ cm}$$

- b Volume = 24 cm³

$$24 \text{ cm}^3 = \boxed{} \text{ cm} \times \boxed{} \text{ cm} \times \boxed{} \text{ cm}$$

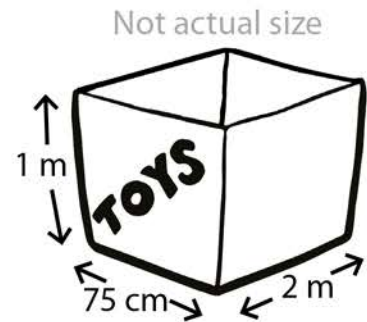
$$\text{or } 24 \text{ cm}^3 = \boxed{} \text{ cm} \times \boxed{} \text{ cm} \times \boxed{} \text{ cm}$$

Solve problems involving the calculation and conversion of units of volume, using decimal notation up to three decimal places

- 1 A box had a height of **5 cm**, a length of **6 cm** and a width of **2 cm**. What was the volume of the box in cubic centimetres?

 cm³

- 2 Look at the toy box shown. What is the volume of the toy box in cubic metres?

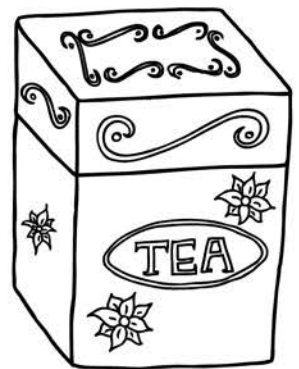
 m³


- 3 In the toy box, there was a cuboid-shaped container for toy cars. It had a volume of **300 cm³**. The top of the container was **0.06 m × 0.05 m**. What was the height of the container in centimetres?

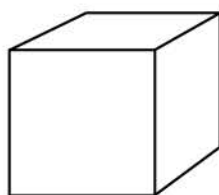
 cm

- 4 A tea caddy was cubic-shaped, with a base measuring **4 cm × 5 cm** and a height of **0.24 m**. Mrs Black filled the caddy with tea until it reached $\frac{3}{4}$ of the height.

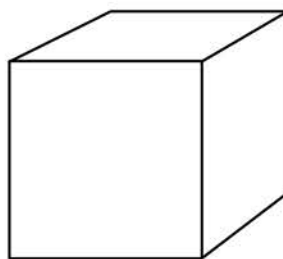
How many cubic centimetres of space did the tea fill?

 cm³


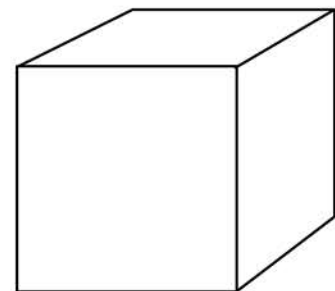
- 5 Ted, the sculptor, wanted to fill the cubes below with sand. How many cubic metres of sand did he need altogether?



← 90 cm →



← 150 cm →



← 2 m →

Not to scale

 m³

Draw 2D shapes using given dimensions and angles

Use paper or your exercise book to answer the following questions.

1 Draw the following rectangles as accurately as you can.

a Length **5 cm**, width **3 cm**

c Length **4.4 cm**, width **3 cm**

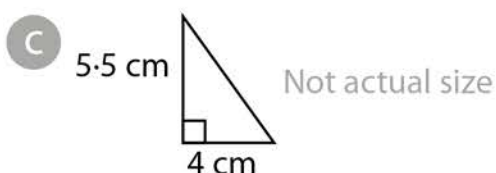
b Length **6 cm**, width **6 cm**

d Length $3\frac{1}{2}$ cm, width $6\frac{1}{2}$ cm

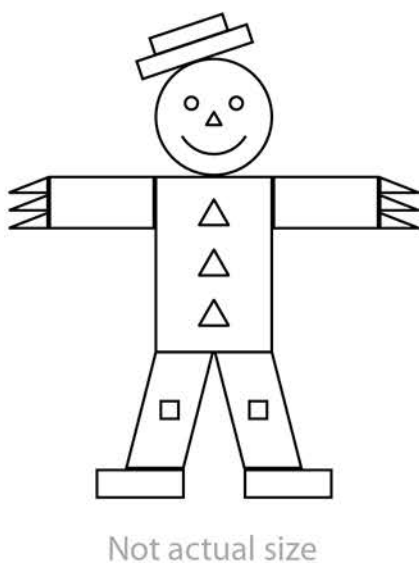
2 Draw the following triangles.

a An equilateral triangle with sides measuring **4 cm**.

b An isosceles triangle with a base of **4.5 cm** and an interior angle of **50°** at either side of its base.



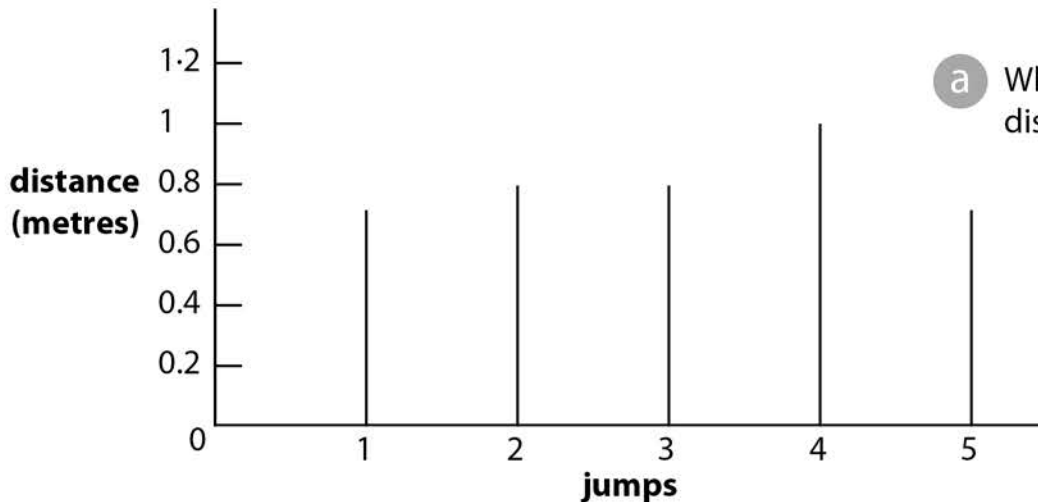
3 Julia made a scarecrow using 2D shapes. Use the information below to draw Julia's scarecrow as accurately as you can. You will need to use your knowledge of the properties of shape.



Part of scarecrow	Shape	Dimensions
top of hat	rectangle	0.5 cm × 2 cm
brim of hat	rectangle	0.4 cm × 3 cm
head	circle	diameter 3 cm
body	rectangle	4 cm × 6 cm
arms	rectangles	3.5 cm × 1.2 cm
fingers	right angle triangles	base 0.4 cm height 1 cm
legs	parallelograms	2 cm × 4 cm 60° × 2 120° × 2
feet	rectangles	3 cm × 1 cm
buttons	equilateral triangles	sides 1 cm
knee patches	squares	1 cm ²
eyes	circles	diameter 0.2 cm (approx)
nose	triangle	sides approx 0.2 cm
mouth	arc of a circle	to fit

Calculate and interpret the mean as an average

- 1 Tom drew the graph below to show the distance he jumped over **5** standing jumps.



- a What was the average distance Tom jumped?

 m

- b Tom only jumped **0.6 m** for his **6th** jump. To the nearest centimetre, what was his new average?

 cm

- 2 Anya is saving for some trainers which cost **£28.95**. On average, how much would she need to save each week for **5 weeks**?


 £

- 3 Linzi collects **£8.16** for charity. Robert collects **£7.54** and Joseph collects **£9.20**. What is the average amount collected?

 £

- 4 Dale was investigating how long he could stand on one foot. His results are shown in the table below.

attempt	1	2	3	4	5
time in seconds	18	17	13	19	18

- a What was his average time?

 seconds

- b Dale wanted to increase his average to **18 seconds**. For how many seconds would he have to stand on one foot in his sixth attempt to achieve this?

 seconds