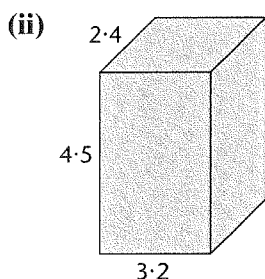
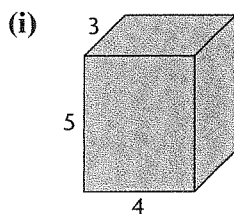


# Revision exercise A1


- 1 a) Find the volume of each of these boxes. All lengths are given in centimetres.



- b) Make an isometric drawing of the cuboid in a) (i).  
 c) Draw accurately a net for the box in a) (ii). It has a lid.
- 2 Write each of these numbers correct to 2 decimal places.  
 a) 7.897                      b) 13.1234  
 c) 0.243                      d) 0.6772
- 3 Write each of these numbers correct to the nearest 10.  
 a) 127                          b) 543  
 c) 995                          d) 1239
- 4 Write each of these numbers correct to the nearest 100.  
 a) 7898                        b) 9820  
 c) 8850                        d) 51
- 5 A cuboid has dimensions 4.3 by 5.2 by 6.7.  
 a) Find its volume. Write down all the figures on your calculator display.  
 b) Write the answer correct to 1 decimal place.

- 6 Write each of these numbers correct to 1 significant figure.

- |          |            |
|----------|------------|
| a) 3.27  | b) 145     |
| c) 9471  | d) 1.5     |
| e) 65.7  | f) 14.5    |
| g) 584.2 | h) 0.52    |
| i) 0.028 | j) 791 000 |

- 7 a) In the 28 days of February Beth earned £864.  
 Estimate how much she earned each day. Show your working.  
 b) At a motorway service station, bottles of soft drink were priced at 73p. In one day they sold 578 bottles. Estimate how much they took for the soft drinks. Show your working.

- 8 Work out these.

- |           |                 |
|-----------|-----------------|
| a) $4^3$  | b) $9^3$        |
| c) $25^3$ | d) $1.6^3$      |
| e) $5^4$  | f) $13^2 + 8^2$ |

- 9 Work out these. Give your answers to 1 decimal place.

- |             |                    |
|-------------|--------------------|
| a) $6.52^2$ | b) $2.7^3$         |
| c) $3.41^4$ | d) $2.1^5$         |
| e) $1.2^7$  | f) $2.6^6 - 1.3^8$ |

- 10 For the formula  $T = a + 3b$ , find  $T$  in each of these cases.

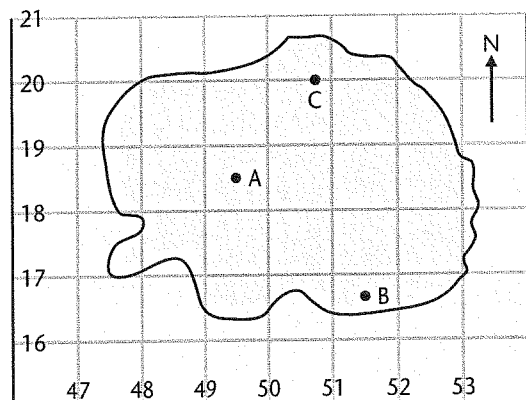
- |                       |                       |
|-----------------------|-----------------------|
| a) $a = 6, b = 2$     | b) $a = 9.2, b = 1.4$ |
| c) $a = 0.5, b = 1.5$ |                       |

- 11 For the formula  $S = 8a - 2b^2$ , find  $S$  in each of these cases.

- |                   |                       |
|-------------------|-----------------------|
| a) $a = 8, b = 3$ | b) $a = 4.6, b = 2.5$ |
|-------------------|-----------------------|

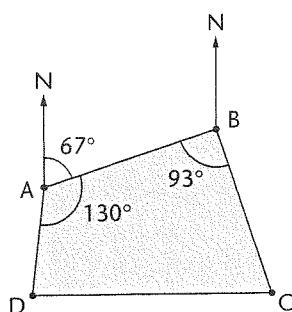
# Revision exercise B1

- 1 This is a sketch map of an island.



- Write down the four-figure grid reference of each of these points.  
i) A      ii) B
- Lucy walked directly from A to B. In what approximate direction did she walk?
- Tom walked south from C. Was A on his left or his right?

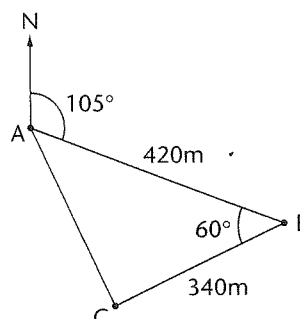
- 2 This is a sketch of four trees in a field, with some angles marked.



Work out each of these bearings.

- A from B
- C from B
- A from D

- 3 This is a sketch of three buoys in the sea.



Make a scale drawing and find the distance and bearing of A from C.  
Use a scale of 1 cm to 50 m.

- Theresa is taking part in a yacht race. She sails 15 miles on a bearing of  $140^\circ$ , then 12 miles on a bearing of  $025^\circ$ . Use a scale of 1 cm to 2 miles to make a scale drawing of her route. Find how far she is from the start and on what bearing.

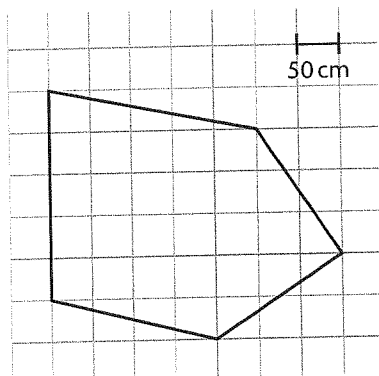
- Stanton is on a bearing of  $137^\circ$  from Aldey. What is the bearing of Aldey from Stanton?

- Solve these equations.

- |                  |                   |
|------------------|-------------------|
| a) $4x + 7 = 11$ | b) $19 = 13 + 2x$ |
| c) $4 = 3x - 2$  | d) $24 = 19 + 5x$ |
| e) $5 = 2x + 1$  | f) $5x + 9 = 4$   |
| g) $11 = 3x + 5$ | h) $12 + 4x = 0$  |

- A map has a scale of 1 cm to 20 km. What area does  $1 \text{ cm}^2$  on the map represent?

- 8 This is a scale drawing of the deck in Fiona's garden.  
The scale is shown on the drawing.

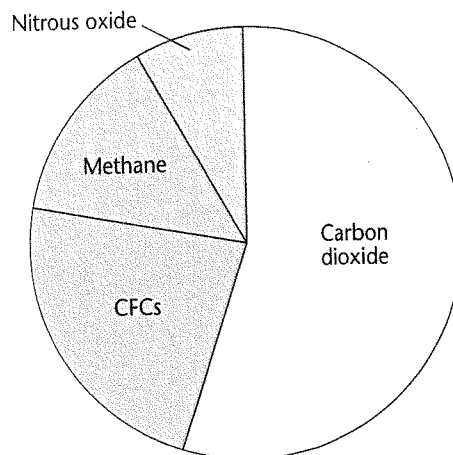


- Estimate the perimeter of the deck.
  - Estimate the area of the deck.
- 9 During one year a grain merchant sells these numbers of sacks of grain.

Barley	12 000
Maize	9 000
Corn	15 000
Wheat	24 000

Show this information on a pie chart.

- 10 The pie chart shows an analysis of greenhouse gases in the atmosphere.



What is the percentage of each of the greenhouse gases present in the atmosphere?

# Revision exercise C1

- 1 Copy and complete these equivalent fractions.

a)  $\frac{1}{4} = \frac{2}{\square} = \frac{\square}{16} = \frac{6}{\square}$

b)  $\frac{3}{5} = \frac{6}{\square} = \frac{\square}{25} = \frac{18}{\square}$

- 2 Write each of these fractions in its lowest terms.

a)  $\frac{3}{9}$       b)  $\frac{15}{35}$       c)  $\frac{8}{12}$       d)  $\frac{18}{54}$

- 3 Work out these.

a)  $\frac{1}{3} \times 9$       b)  $\frac{5}{8} \times 12$       c)  $\frac{2}{3} \times \frac{1}{4}$

d)  $\frac{1}{3} \times \frac{3}{8}$       e)  $\frac{2}{3} \times \frac{1}{5}$

- 4 a) Write each of these as a mixed number.

(i)  $\frac{4}{3}$       (ii)  $\frac{12}{7}$       (iii)  $\frac{15}{4}$

- b) Write each of these as an improper fraction.

(i)  $2\frac{1}{3}$       (ii)  $1\frac{5}{8}$       (iii)  $3\frac{1}{4}$

- 5 This is the menu at Fred's cafe.

MENU	
First course	Second course
Fish & Chips	Chocolate ice-cream
Ham Salad	Fruit Salad
Vegetable Curry	Ginger Sponge

Julian is going to have a two-course meal.

- a) Make a table with two columns and list all the possible choices he could make.  
b) If all the choices for each course are equally likely, what is the probability that he  
i) chooses Ham Salad and Ginger Sponge?  
ii) does not choose Fish & Chips?

- 6 Salma throws two dice and records the result of multiplying the two scores together.

Draw a grid to show all the possible outcomes.

Find the probability that Salma's result is each of these.

- a) 36      b) 12      c) 4      d) Not 4

- 7 What is the name of each of these quadrilaterals?

- a) All angles the same and just the opposite sides equal  
b) All sides the same and just the opposite angles equal

- 8 Draw an isosceles trapezium.

Mark any sides that are parallel, any sides that are the same and any angles that are the same.

- 9 A quadrilateral has diagonals that bisect each other.

What types of quadrilateral could it be?

- 10 Write each of these as simply as possible.

- a)  $a + a + a$   
b)  $p + q + p + q$   
c)  $3a + 2b - a - 2b$   
d)  $3a \times 4a$   
e)  $pq + 2pq$   
f)  $ab^2 \times a^2b$

- 11 Simplify these expressions.

- a)  $4x - 2y + 3y - 2x$   
b)  $a^2b + 2ab + 3a^2b - ab$   
c)  $8y \times 3z$   
d)  $pq \times p^2q$   
e)  $3x^2 \times 2xy$

- 12 Simplify these by collecting like terms.

- a)  $3a + 4b + 2a - 4b$   
b)  $5ab^2 - 2a^2b + 3a^2b - 4ab^2$   
c)  $2ab + 3ac - 4ad + 2ab + 4ad - ac$   
d)  $x^2 - 2xy + 3yx + 3x^2$

# Revision exercise D1

- 1 a) Make an accurate full-size drawing of each of these triangles.
  - (i) Triangle PQR with  $PQ = 6$  cm, angle  $RPQ = 63^\circ$  and angle  $PQR = 38^\circ$
  - (ii) Triangle PQR with  $PR = 5.2$  cm, angle  $PRQ = 39^\circ$  and angle  $RPQ = 48^\circ$
- b) For each triangle in part a), measure the unknown lengths on your drawings.
- 2 a) Make a scale drawing of the triangle ABC where  $AB = 21$  cm,  $BC = 18$  cm and  $AC = 12$  cm. Use a scale of 1 cm to 3 cm.
- b) Measure the angles of triangle ABC on your drawing.
- 3 For each of these sets of data work out the mean, median, mode and range.
  - a) 4, 7, 7, 9, 11, 7, 6, 7, 9
  - b) 20, 23, 25, 27, 29, 25, 22, 25
  - c) 16, 17, 10, 18, 14, 17, 17, 11, 12, 13
- 4 Two machines pack paper clips into boxes. Each box should hold 200 paper clips. A sample of 100 boxes from each machine was checked. A summary of the results is given in the table.

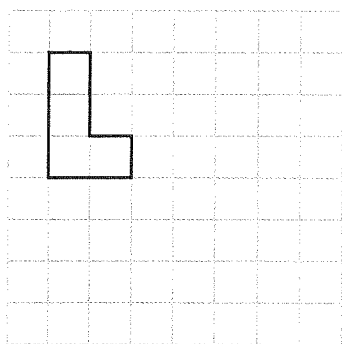
	Mean	Median	Mode	Range
Machine A	200.07	200	199	6
Machine B	200.87	201	201	7

Comment on these results

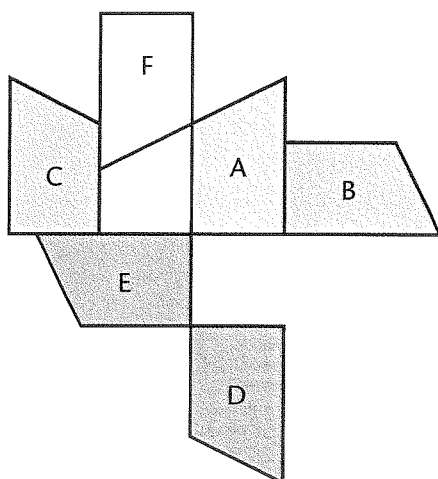
- 5 Work out these.
  - a)  $4 - 3 - 2 + 4$
  - b)  $2 - 4 + 3 - 4$
  - c)  $6 - 5 + 2 + 3$
  - d)  $2 - 3 - 5 + 4 + 3$
  - e)  $-2 - 3 + 4 - 7 + 6$
  - f)  $-5 + 6 + 1 - 4 - 6 + 3$
- 6 Work out these.
  - a)  $-4 \times -3$
  - b)  $24 \div -3$
  - c)  $-9 \times -4 \times 2 \div 6$
  - d)  $(-20 \div 2) - (2 \times -4)$
  - e)  $-12 \div -4 \times 24 \div -6$
  - f)  $10 + (-5 \times -2 \times -3)$
  - g)  $(-2 + 12) \div (4 - 6)$
- 7 Put these numbers in order, smallest first.  
 $\frac{4}{5}, \frac{9}{16}, 0.74, 82\%, \frac{7}{9}$
- 8 a) Work out 20% of £40.  
 b) Work out 40% of £30.
- 9 In 1966, 53% of households in a village had a black-and-white television. There were 786 households in the village. How many households had a black-and-white television? Give your answer to the nearest whole number.
- 10 In Ponderosa Avenue 85% of the houses have a car. There are 180 houses in the avenue. How many have a car?
- 11 Julie was earning £160 a week. She was given a rise of 12%. How much was her new wage?

# Revision exercise E1

- 1 Copy and complete this pattern so that it has rotation symmetry of order 4.



- 2 Which of these shapes are rotations of shape A?



- 3 a) Draw  $x$ - and  $y$ -axes from 0 to 8. Plot the points (4, 6), (6, 6) and (6, 3) and join them to make a triangle. Label it A.
- b) Plot the points (1, 1), (4, 3), and (1, 3) and join them to make a triangle. Label it B.
- c) Through what angle do you rotate triangle A to fit it on to triangle B?
- 4 18 of the students in a class are girls. There are 30 students in the class. What fraction of the students are girls? Give your answer in its lowest terms.
- 5 Find these.
- a) 14 as a percentage of 35
- b) £48 as a percentage of £400
- c) 20 cm as a percentage of 4 m
- 6 Find £2.50 as a percentage of £31. Give your answer correct to the nearest 1%.
- 7 Find 40 cm as a percentage of 3 m. Give your answer correct to 1 decimal place.
- 8 Promo washing powder used to cost £3.60 for a large packet. The price was increased to £3.87. What percentage increase was this?
- 9 Stephen bought an apartment in London for £310 000. He sold it two years later for £305 000. What was his percentage loss? Give your answer correct to 1 decimal place.

- 10 Copy and complete this table for the equation  $y = 4 - 2x$ .

$x$	-1	0	1	2	3	4	5
4				4			
$-2x$				-4			
$y = 4 - 2x$				0			

- 11 Draw the graph of  $y = 2x - 7$  for values of  $x$  from 0 to 6.
- 12 The cost £ $C$  of an advert in a newspaper is given by the formula  $C = 10 + 3n$ , where  $n$  is the number of lines.
- Draw the graph of  $C = 10 + 3n$  for values of  $n$  from 0 to 40.
  - From the graph find the value of  $n$  when  $C = 55$ . Give your answer correct to the nearest whole number.