

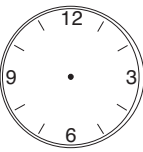
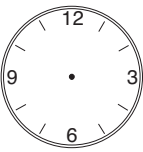
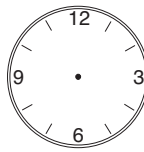
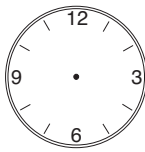
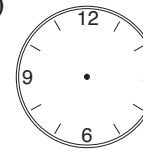
**1**

Fill in the missing numbers and signs.

- a) 1 second  $<$  1 minute  $\square$  1 hour  $\square$  1 day  $\square$  1 week  
 $\times 60$   $\times 60$   $\times \square$   $\times \square$
- b) 1 hour =  $\square$  seconds, 1 month  $\approx$   $\square$  days, 1 year  $\approx$   $\square$  weeks  
 1 year =  $\square$  days, 1 year =  $\square$  months, 1 day =  $\square$  hours
- c) 85 minutes  $\square$  1 hour 25 minutes, 1 week =  $\square$  hours



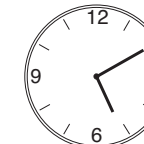


**2**

Draw the hours and minute hands on the clocks. Write each time in another way.

- a)  7 hrs 25 min
- b)  05:55
- c)  20 min to 8
- d)  0 hrs 5 min
- e)  15 h 20 min 45 sec
- .....

**3**

Write these times using the 24-hour clock.

- a) morning  b) evening  c) afternoon  d) night  e) night 
- .....

**4**

- a) How many days are in the first 5 months of a leap year?

.....

Answer: .....

- b) A train travelled 127 km in the first hour and a half of a journey, then it stopped for 12 minutes. It took 65 minutes to cover the remaining 102 km.

How much time did the train take to do the whole journey?

.....

.....

Answer: .....

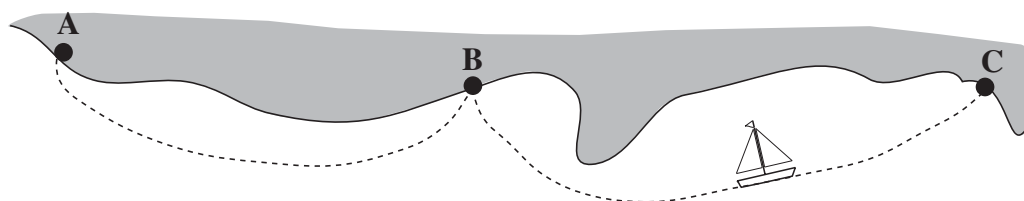
**1**

Continue each sequence for 4 more terms.

- a) 14 h 20 min, 14 h 40 min, 15 h, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,
- b) 3.50 pm, 3.10 pm, 2.30 pm, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,
- c) 03:50, 03:10, 02:30, 01:50, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,

**2**

A ship sailed from A to B in 1 hour 47 minutes, then from B to C in 2 hours 35 minutes.



- a) How much time did it take to sail from A to C?  
.....
- b) How much more time did it take to sail from B to C than from A to B?  
.....

**3**

Write a plan, do the calculation and check your result in the context of the question.  
Write the answer as a sentence.

- a) How many minutes are there between half past ten in the morning and a quarter past one in the afternoon of the same day?

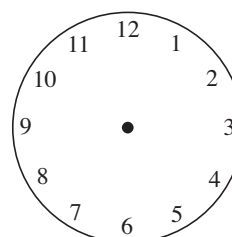
*Answer:* .....

- b) Lenny spent 6 and a half hours on maths last week.  
He had 5 maths lessons of 45 minutes each and spent 90 minutes at the school's maths club. The rest of the time was spent on his maths homework.  
How long did it take Lenny to do his maths homework last week?

*Answer:* .....

**4**

Draw two straight lines to divide this clock face into three parts so that the sum of the numbers in each part is the same.



**1**

If 1 lb of cherries costs 32 p, how much do 2 lb, 3 lb, 10 lb, 437 lb of cherries cost?

Continue the table and complete the statement.

1 lb	→	32 p
2 lb	→	$2 \times 32 \text{ p} = 64 \text{ p}$
3 lb	→	
10 lb	→	
437 lb	→	

*Calculations:*

The costs are in  proportion to one another.

**2**

Solve this problem in your exercise book and write the answer here.

If 4 equal rolls of material contain 256 m, what length of material would be in 150 such rolls?

*Answer:* .....

**3**

Solve this problem in your exercise book and write the answer here.

If 6 pens cost 240 p, how many pens can we buy for 360 p?

*Answer:* .....

**4**

If 15 kg of paint cost £9.45, how much do

1 kg, 2 kg, 5 kg, 11 kg, 20 kg, 27 kg, 30 kg, 150 kg

of paint cost? Complete the table. Do the calculations in your exercise book.

Quantity	15 kg	1 kg	2 kg	5 kg	11 kg	20 kg	27 kg	30 kg	150 kg
Price	£9.45	p							

**5**

A journey took 6 hours in a car travelling at an average speed of 50 km per hour.

How much time would the journey have taken if the car had travelled at these average speeds?

50 km per hour	→	6 hours
25 km per hour	→	.....
60 km per hour	→	.....
100 km per hour	→	.....
40 km per hour	→	.....

**1**

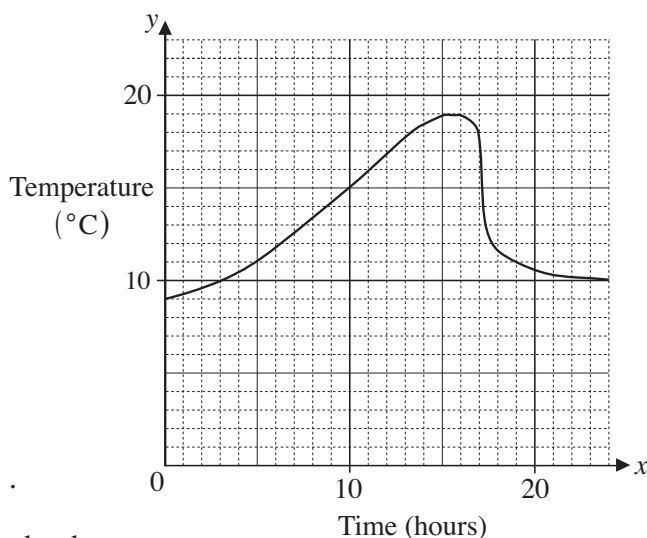
The graph shows the variation in temperature over one day.

- a) What temperature was it at 10.00 am?
- .....

- b) At what time of day was it hottest?
- .....

- c) During which times was the temperature rising?
- .....

- d) There was a downpour during the day. When do you think that it happened? .....

**2**

One day, we measured the temperature every hour from 6 o'clock in the morning to 3 o'clock in the afternoon. We noted the data as pairs of numbers:

(6, 2), (7, 2), (8, 4), (9, 5), (10, 7), (11, 10), (12, 13), (13, 15), (14, 14), (15, 12)

For example (6,2) means that at 6 o'clock the temperature was 2°C.

- a) Show the data on a graph.

- b) Is it correct to join the dots with a continuous curve? Why?
- .....

- c) When was the temperature highest?
- .....

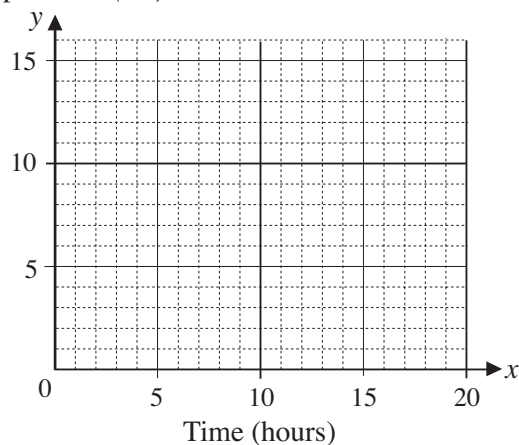
- d) Estimate the temperature at:

6.30 am, 9.15 am, 12.45 pm

.....

- e) Which season do you think it was? .....

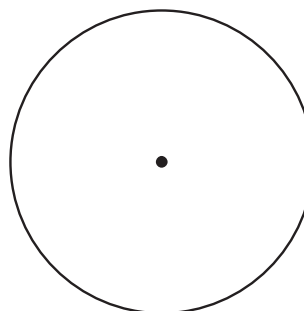
Temperature (°C)

**3**

Among 60 people at a conference, 10 are American, 20 are British, 5 are Chinese, 15 are Japanese and 10 are Hungarian.

- a) Show the data in a **pie chart**.

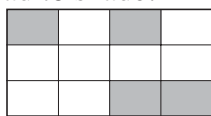
- b) Write what fraction of the circle represents each nationality.



**1**

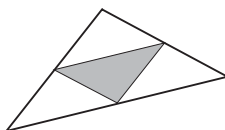
Complete the diagrams so that the correct number of grid unit shapes are shaded to make the fraction correct. Write in the boxes the number of extra grid unit shapes you had to shade.

a)



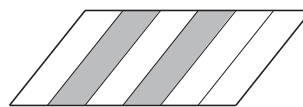
$$\frac{1}{3} \quad \boxed{\phantom{00}}$$

b)



$$\frac{3}{4} \quad \boxed{\phantom{00}}$$

c)

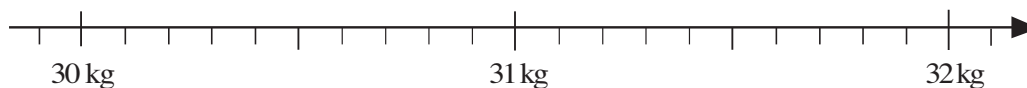


$$\frac{5}{6} \quad \boxed{\phantom{00}}$$

**2**

Joe weighed himself and told his friend that he weighed 31 kg, to the nearest kg. How heavy could Joe be? Write an inequality and show it on the number line.

.....

**3**

Do the calculations and compare the results in each row.

- a)  $15 \times 8 + 25 \times 8 =$        $(15 + 25) \times 8 =$        $15 + 25 \times 8 =$
- b)  $42 \times 12 \div 3 =$        $(42 \times 12) \div 3 =$        $42 \times (12 \div 3) =$
- c)  $24 + 72 \div 3 \times 12 =$        $(24 + 72) \div 3 \times 12 =$        $24 + 72 \div (3 \times 12) =$

**4**

Which is more? Try to fill in the missing signs without doing the calculations.

- a)  $(32 + 18) - 16 \bigcirc 32 + (18 - 16)$       b)  $518 - (281 - 81) \bigcirc (518 - 281) - 81$
- c)  $480 + 237 \bigcirc 482 + 235$       d)  $6512 - 6227 \bigcirc 6510 - 6329$
- e)  $(17 + 5) \times 7 \bigcirc 17 + 5 \times 7$       f)  $(6 \times 8) \times 2 \bigcirc (6 \times 2) \times (8 \times 2)$
- g)  $480 \times 60 \bigcirc 400 \times 60 + 80 \times 60$       h)  $480 \times 60 \bigcirc 500 \times 60 - 20 \times 60$

**5**

Solve the equations. Do the calculations in your exercise book. Write the results here.

- a)  $\boxed{\phantom{00}} + 35.2 = 209$       b)  $\boxed{\phantom{00}} - 756 = 158$       c)  $x + x + 0.4 = 1$
- .....      .....      .....
- d)  $34\frac{1}{2} - y = -11$       e)  $z \times 35 = 2100$       f)  $x \div x + 40 = 41$
- .....      .....      .....

**1**

How many different 4-digit numbers can you make from these cards?

Continue listing them in order.

4 4 5 6

4456, 4465, ..... Number possible

.....

**2**

The five members of a committee, A, B, C, D and E, elected one member as chairman and another as secretary. List the possible outcomes in the table.

Chairman	A	A																	
Secretary	B	C																	

How could you work out how many outcomes there could be without listing all the possibilities? .....

**3**

Peter invented a trick for guessing numbers and he is trying it out on his classmates.

*Think of a number. Add 5. Double the result. Subtract 10. Subtract your original number. You are left with your original number, aren't you?*

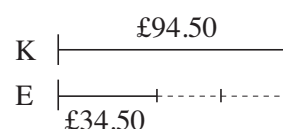
Follow Peter's instructions, then write it down in a mathematical way using:

- a) your own number: .....
- b) 21: .....
- c) any number,  $n$ : .....

**4**

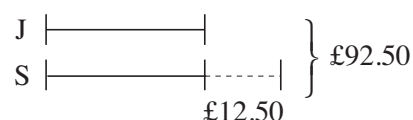
Solve the problems. Use the diagrams to help you.

- a) Kate has £94.50 and Eve has £34.50. How much should Kate give to Eve so that they both have the same amount?



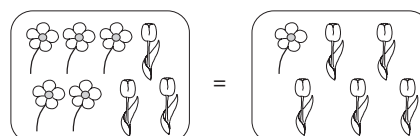
Answer: .....

- b) Joe and Sam have £92.50 altogether but Sam has £12.50 more than Joe. How much money do they each have?



Answer: .....

- c) These two bunches of flowers cost the same. How many daisies is a tulip worth?



Answer: .....

**1**

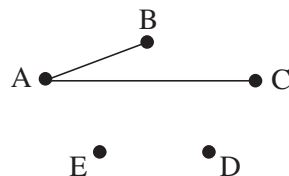
Five friends (A, B, C, D and E) said goodbye to each other after a party and shook hands with each other.

Complete the diagrams and fill in the answers.

- a) How many 'goodbye's were said?      b) How many handshakes were there?

	A	B	C	D	E
A					
B					
C					
D					
E					

'Goodbye's



handshakes

**2**

Form two 3-digit numbers from the digits 2, 5, 8, 0, 1, 4 so that one of them is the smallest possible and the other is the greatest possible.

Calculate their sum and difference

Smallest:

Sum: 


Difference: 


Greatest:

**3**

a) 

		1	9	8	
	2	0	4	0	
+	9	9	9	0	3

b) 

4	4	8	9	
-	1	2	9	4

c) 

	3	0	6
	×	3	5

d) 

	7	9	6
	×	4	1

Practise calculation.

e) 

7	4	5	0

f) 

1	0	5	3	7	7

g) 

1	1	1	1	1	1	1

h) 

1	0	0	4	6	5	3	0

**4**

Solve these problems in your exercise book.

- a) Yesterday, the temperature at mid-day was  $12^{\circ}\text{C}$  but at dawn today it is  $-3.5^{\circ}\text{C}$ . By how many degrees has the temperature cooled down?
- b) Augustus Caesar was born in 63 B.C. and died in 14 A.D. How long did he live?
- c) The Roman Empire lasted for 1229 years and ended in 476 A.D. In what year did the Roman Empire begin?

**1**

Solve the problems in your exercise book. Write the answer in a sentence here.

- a) The farmer harvested 983 kg of wheat. He put the wheat into sacks which held 75 kg each. How many sacks did he need?

*Answer:* .....

- b) If 30 cans of lemonade are packed in 5 boxes, how many boxes should we buy if we need 44 cans of lemonade for a party?

*Answer:* .....

- c) 3 metres of a certain type of material cost £6.00. What would be the price of 12 metres of the same material?

*Answer:* .....

**2**

Do the calculations in your exercise book and write the results here.

a)  $1273 - 27 \times 19 - 8 =$        b)  $(1273 - 27) \times (19 - 8) =$

c)  $1273 - (27 \times 19 - 8) =$        d)  $1273 - 27 \times (19 - 8) =$

**3**

Continue each sequence for 5 more terms. Write the rule that you used.

- a) 0, 1, -2, 3, -4, 5, -6, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,

*Rule:* .....

- b)  $-\frac{1}{3}$ , 0,  $\frac{1}{3}$ ,  $\frac{2}{3}$ , \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, *Rule:* .....

- c) 0.1, 0.2, 0.4, 0.8, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, *Rule:* .....

- d) 1, 3, 6, 10, 15, 21, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,

*Rule:* .....

- e) 0, 1, 3, 7, 15, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,

*Rule:* .....

**4**

In how many ways can you read the word EXETER in these grids if you can only move one step down or one step to the right?

a)

E
X
E
T
E
R

b)

E	X
X	E
E	T
T	E
E	R

c)

E	X	E
X	E	T
E	T	E
T	E	R



**1**

Join up each item to the matching label.



chair

grape

circle drawn on  
a sheet of paperpiece of  
tissue paper*solid**line**surface*

thick cardboard

fine thread

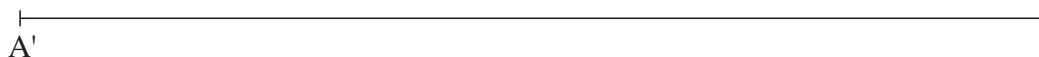
grain of sand

skin of a grape

**2**

Use a ruler and a pair of compasses. Draw on plain paper. Follow the instructions.

- Draw a **straight** line with a ruler.
- Mark a **point** on the line and label it Q.
- Draw over one part of the line in *red* and the other part in *blue*.  
What colour is the point Q? .....
- Draw another straight line. Mark two different points on the line and label them A and B. Draw over the **segment** between A and B in *red*. Draw over the other parts of the line in *green*.
- Using the pair of compasses, copy your **segment AB** on to the line below.  
Estimate its length first, then measure its actual length to the nearest mm.



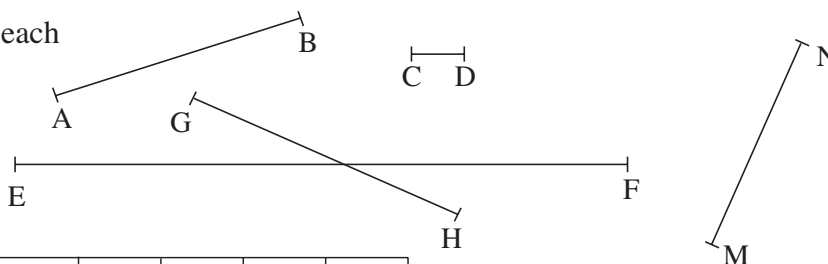
Estimation:

Length:

mm

**3**

Estimate the length of each line segment in cm, then measure it accurately to the nearest mm.

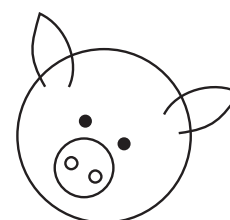
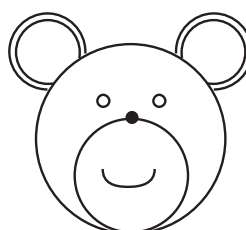


Fill in the table.

	AB	CD	EF	GH	MN
Estimated (cm)					
Measured (mm)					
Difference (mm)					

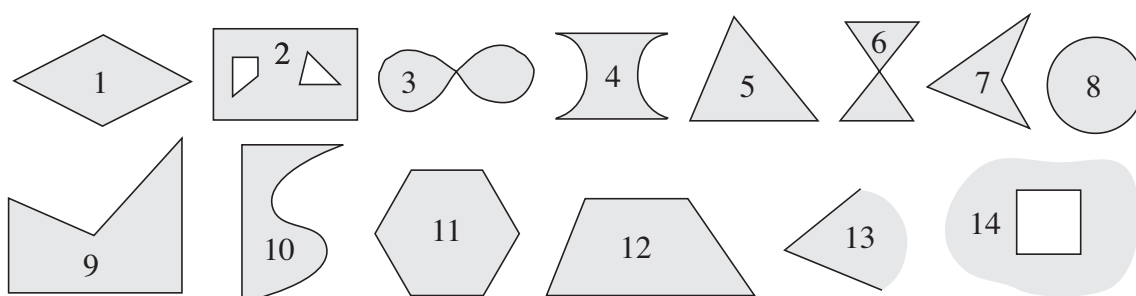
**4**

Draw a copy of these shapes on plain paper using only a pair of compasses.



**1**

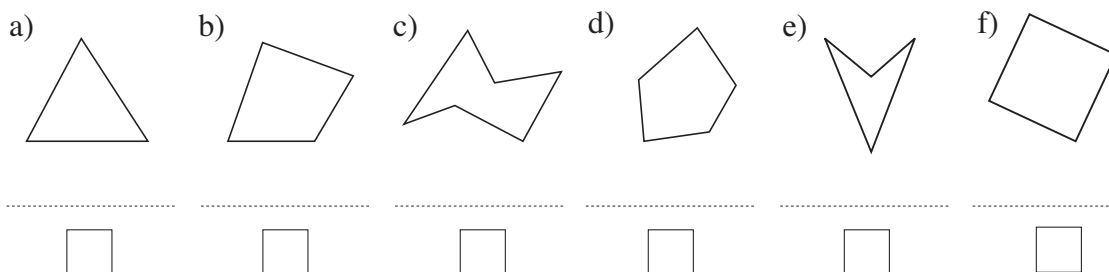
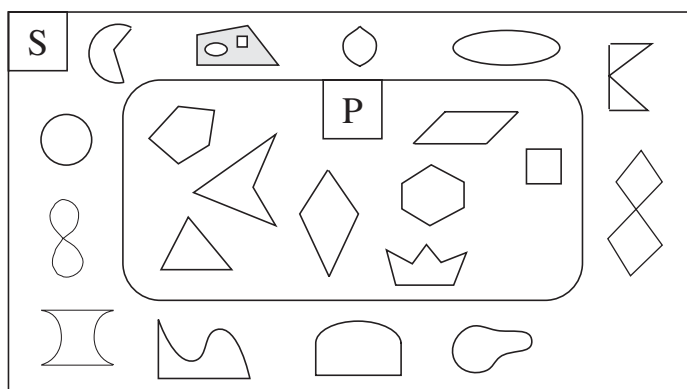
List the numbers of the plane shapes which match the descriptions.



- a) It is enclosed only by straight lines. ....
- b) It is enclosed by straight and curved lines. ....
- c) It is enclosed only by curved lines. ....
- d) It is not enclosed. ....
- e) It has parallel sides. ....
- f) It has perpendicular sides. ....
- g) It has exactly 4 straight sides. ....
- h) It has exactly 6 vertices. ....

**2**

Label the vertices. Write the name of the shape and how many diagonals it has below it.

**3**

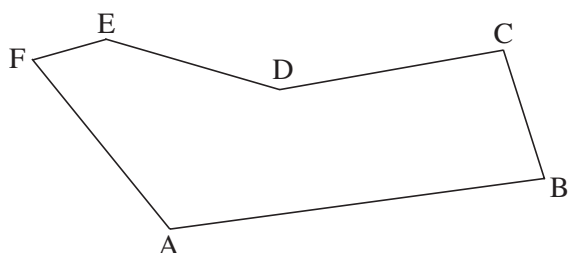
- a) Write what the labels S and P might mean.  
 S: .....  
 P: .....
- b) Draw one more element in each set.
- c) Fill in the missing words.

Every  is a   but not every

is a .

**1**

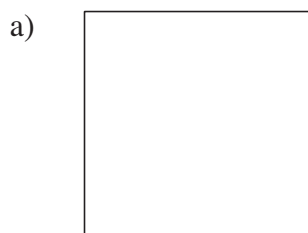
Measure the length of each side of this polygon and calculate the length of its perimeter.



$AB =$  .....  $BC =$  .....  
 $CD =$  .....  $DE =$  .....  
 $EF =$  .....  $FA =$  .....  
 $P =$  .....

**2**

Measure the sides then calculate the length of each perimeter.



$P =$



$P =$



$P =$



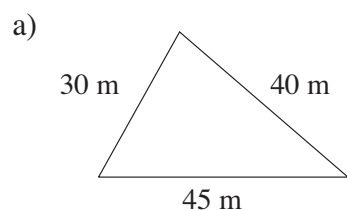
$P =$



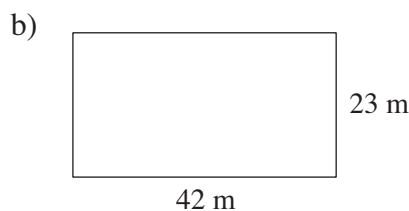
$P =$

**3**

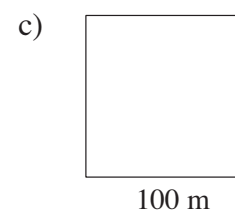
What length of fence (including the gate) is needed to enclose each of these gardens?



$P =$



$P =$



$P =$

**4**

a) Calculate the perimeter of a rectangle if:

i) one side is 17 cm and the other is 38 cm,  $P =$  .....

ii) one side is 2 m 10 cm and the other is 130 cm,  $P =$  .....

iii) each side is 31 cm.  $P =$  .....

b) Calculate the length of the other side of a rectangle if one side is 70 cm and its perimeter is 350 cm.


$b =$  .....

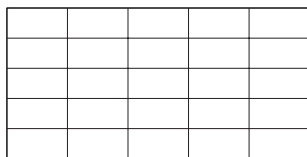
c) Calculate the side of a square if its perimeter is:

i) 360 cm  $a =$  ..... ii) 1 m 4 cm  $a =$  .....


**1**

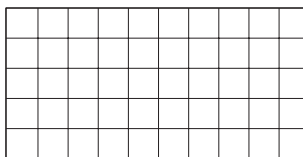
The floor of a doll's house can be covered by three different shapes of tiles.  
What is the unit of area used in each case and how many such units are needed?

a)  4 cm  
8 cm




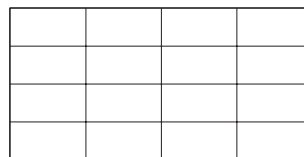
.....

b)  4 cm  
4 cm



.....

c)  5 cm  
10 cm

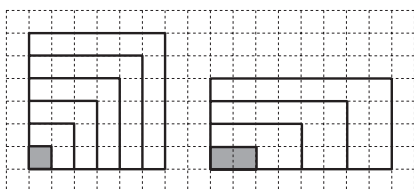


.....

**2**

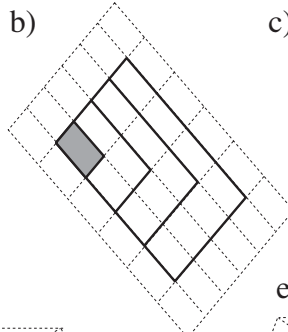
How does the area of a polygon change if each side is enlarged by the same number of times? (In each part, the shaded shape is 1 unit.)

a)

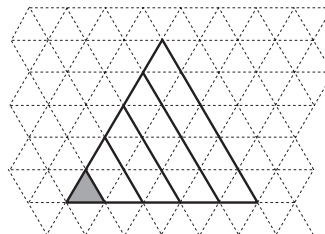


1, 4, 9, ...

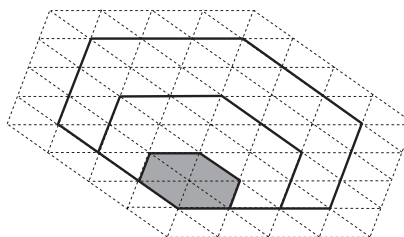
b)



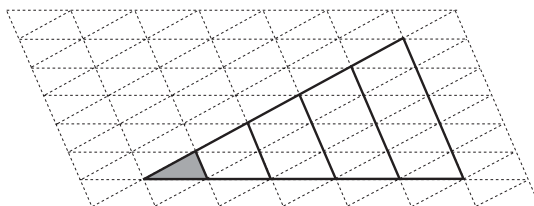
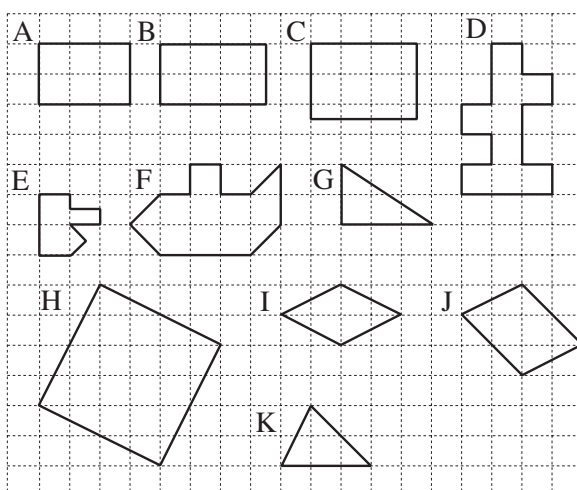
c)



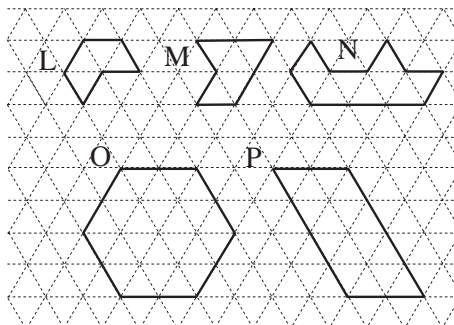
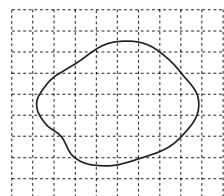
e)



d)

**3**

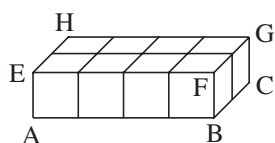
Count or calculate the areas of these polygons and write them in your exercise book.

**4**

The area of this shape is: i) more than .....  
ii) less than .....

**1**

- a) Complete the drawing of the net. Calculate the area of each face and then the surface area of the cuboid.



$$ABCD = \dots\dots\dots$$

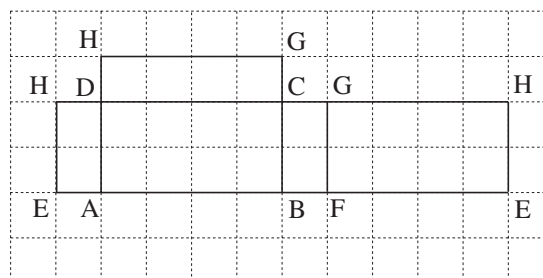
$$EFGH = \dots\dots\dots$$

$$ABFE = \dots\dots\dots$$

$$DCGH = \dots\dots\dots$$

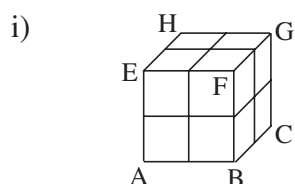
$$ADHE = \dots\dots\dots$$

$$BCGF = \dots\dots\dots$$

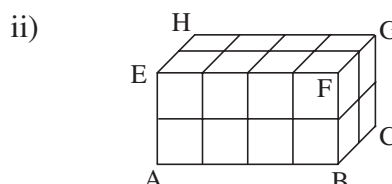


$$\text{Total area} = \dots\dots\dots$$

- b) In your exercise book, draw a net for each of these cuboids, then calculate the area of each face and its total surface area. Write the surface area here.



$$A = \dots\dots\dots$$



$$A = \dots\dots\dots$$

**2**

In your exercise book, draw 3 different nets for a cube of side 2 units.

**3**

Calculate the surface area of each cuboid if  $a$ ,  $b$  and  $c$  are the lengths of its edges.

a)  $a = 5 \text{ cm}$   $A = \dots\dots\dots$

$b = 10 \text{ cm}$   $\dots\dots\dots$

$c = 3 \text{ cm}$   $\dots\dots\dots$

b)  $a = 8 \text{ m}$   $A = \dots\dots\dots$

$b = 7 \text{ m}$   $\dots\dots\dots$

$c = 10 \text{ m}$   $\dots\dots\dots$

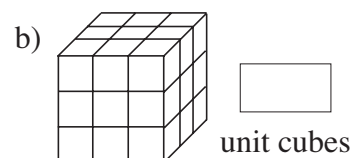
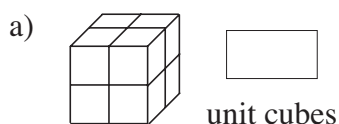
c)  $a = 1 \text{ m}$   $A = \dots\dots\dots$

$b = 1 \text{ m}$   $\dots\dots\dots$

$c = 7 \text{ m } 50 \text{ cm}$   $\dots\dots\dots$

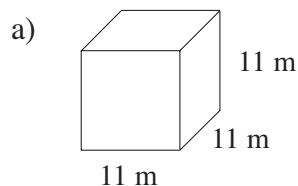
**4**

How many unit cubes are needed to build these cubes?



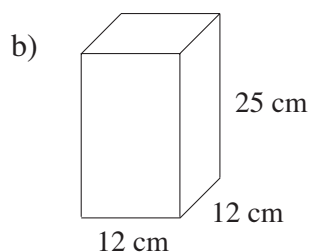
**1**

Calculate the surface area of these cuboids.



$$A = \dots\dots\dots$$

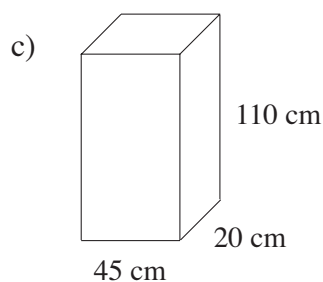
$$\dots\dots\dots$$



$$A = \dots\dots\dots$$

$$\dots\dots\dots$$

$$\dots\dots\dots$$



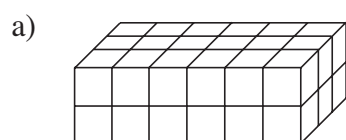
$$A = \dots\dots\dots$$

$$\dots\dots\dots$$

$$\dots\dots\dots$$

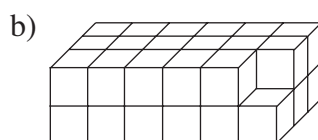
**2**

Calculate the surface area of these solids in your exercise book. Write the answers here.  
How many unit cubes is each of them made from? This is its **volume**.



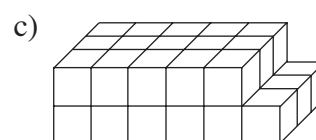
$$A = \dots\dots\dots$$

$$V = \dots\dots\dots$$



$$A = \dots\dots\dots$$

$$V = \dots\dots\dots$$



$$A = \dots\dots\dots$$

$$V = \dots\dots\dots$$

**3**

A box is shaped like a cuboid but is open at the top. Inside, it is 1.4 m long, 1 m wide and 80 cm high. What is its inner surface area?

$$A = \dots\dots\dots$$

$$\dots\dots\dots$$

$$\dots\dots\dots$$

**4**

Calculate the surface area of a small box which has these measurements.

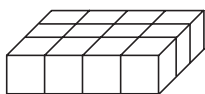
$$a = 5 \text{ cm} \qquad A = \dots\dots\dots$$

$$b = 17 \text{ mm} \qquad \dots\dots\dots$$

$$c = 4 \text{ cm } 3 \text{ mm} \qquad \dots\dots\dots$$

**1**

Pete has already made the base layer of a cuboid from unit cubes.  
If Pete has 72 unit cubes, how high can he build his cuboid?



Number of unit cubes in base: .....

Number of layers: .....

Height of cuboid: .....

**2**

Calculate the volume of each of these cuboids if the length of its edges in units are:

a)  $a = 8, b = 5, c = 6$   $V = \dots\dots\dots$

b)  $a = b = 5, c = 10$   $V = \dots\dots\dots$

c)  $a = b = c = 9$   $V = \dots\dots\dots$

**3**

Use the tables to show the lengths of the edges of different cuboids which can be made from these numbers of cubes.

a) 7 unit cubes

$a$						
$b$						
$c$						

b) 8 unit cubes

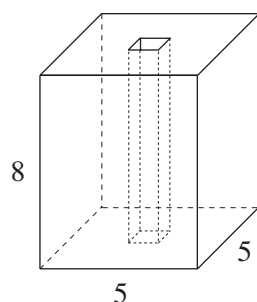
$a$						
$b$						
$c$						

c) 30 unit cubes

$a$						
$b$						
$c$						

**4**

This solid has a 1 unit square hole bored right through its centre.



a) How many unit cubes would be needed to build the solid?

b) What is its surface area?

**1**

Join up the calculation plans to the correct shapes.



$2 \times 2 \times 2 + 4 \times 2 \times 5$	$4 \times 15$	$(5 + 3) \times 2$	$11 \times 5 \times 3$	$(4 + 7) \times 2$
---	---------------	--------------------	------------------------	--------------------

$10 + 12 + 13 + 11 + 17$	$2 \times 2 \times 5$
--------------------------	-----------------------

$6 \times 10 \times 10$	$(11 \times 5 + 11 \times 3 + 5 \times 3) \times 2$	$15 \times 15$	$10 \times 10 \times 10$	$5 \times 3$
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Colour the plan *blue* if it is a perimeter, *red* if it is an area and *green* if it is a volume.**2**A rectangular-shaped garden is 22 m long and 12 m wide. *D*:

- a) How long is the fence around it if the gate is 3 m wide?

Draw a diagram first.

*Plan*: ..... *C*:*Answer*: .....

- b) What is the area of the garden?

*Plan*: ..... *C*:*Answer*: .....**3**

Solve these problems in your exercise book. Write only the answers here.

- a) The area of the surface of a cube is
- $150 \text{ cm}^2$
- .

What is its volume in centimetre cubes ( $\text{cm}^3$ )?

$V = \boxed{\phantom{000}} \text{ cm}^3$

- b) A cube is built from 64 1 cm cubes, so its volume is
- $64 \text{ cm}^3$
- .

What is its surface area in centimetre squares ( $\text{cm}^2$ )?

$A = \boxed{\phantom{000}} \text{ cm}^2$

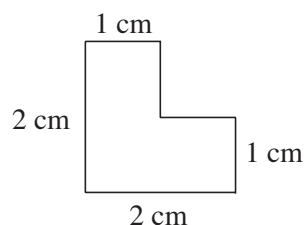
**4**

Solve these problems in your exercise book.

- a) We poured water into a 10 cm cube which was open at the top.

How much water did we pour in if the water level was: i) 5 cm ii) 3.5 cm?

- b) Divide this hexagon into 4
- congruent**
- parts.



- c) Make 4
- congruent**
- triangles from 6 straws of equal length.