

**1**

In your exercise book, write these numbers as the sum of hundreds, tens, units, etc.

*Example*  $605 = 6 \times 100 + 0 \times 10 + 5 \times 1 = 600 + 5$

- a) 135      b) 309      c) 3245      d) 9280

**2**

In your exercise book, write these numbers in words.

- a) 234      b) 1740      c) 2009      d) 3000  
 e) 4097      f) 8016      g) 9999      h) 7705

**3**

a) Write these numbers as digits.

- i) Five thousand, three hundred and four = .....
- ii) Three thousand, five hundred and four = .....
- iii) Four thousand and five = .....
- iv) 5 thousands + 2 hundreds + 3 tens + 4 units = .....
- v) 4 thousands + 7 tens + 2 units = .....
- vi) 23 units + 50 hundreds = .....
- vii) 3 hundreds + 52 tens + 6 units = .....
- viii) 5 thousands + 2 hundreds + 410 units = .....

b) List them in increasing order.

.....

**4**

Write these numbers in the place-value table.

a)

	TTh 10 000	Th 1000	H 100	T 10	U 1
5409					
9521					
1935					
2050					
5499					
5499 + 1					
5499 + 2					

b)

	TTh 10 000	Th 1000	H 100	T 10	U 1
35					
10 times 35					
100 times 35					
1000 times 35					

**5**

Write the next two terms in the sequence.

- a) 413, 418, 423, 428, ....., .....
- b) 1200, 1100, 1000, ....., .....

**1**

a) In your exercise book, write these numbers in words.

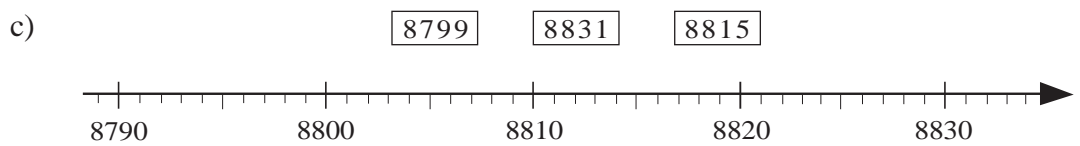
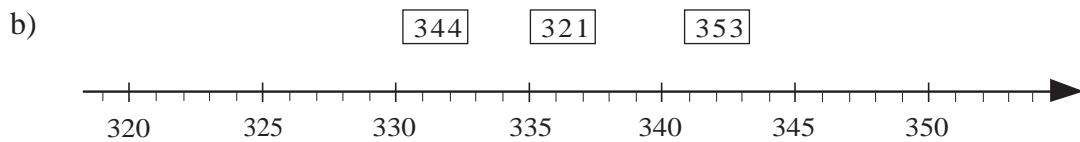
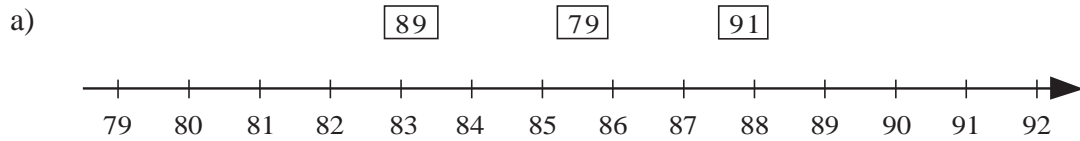
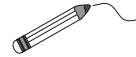
- i) 1240      ii) 324      iii) 2001      iv) 5430  
 v) 10101      vi) 1027

b) List them in increasing order.

.....

**2**

Join up each number to the corresponding point on the number line.



**3**

a) Follow the pattern and complete the table.

Next smaller ten	Number	Next greater ten
	3	
80	86 ≈	90
	392	
	4535	
	10324	

b) Write a ≈ sign nearest the correct rounding to the nearest whole ten.

**4**

Round each number to the nearest whole ten and nearest whole hundred.

- a) 299 ≈      ≈      b) 4604 ≈      ≈  
 c) 2875 ≈      ≈      d) 9048 ≈      ≈

**5**

Complete the statements.

- a) 345  410      b) 410 - 345 =       c) 345 +  = 410  
 d) 1320  1120      e) 1320 - 1120 =       f) 1120 +  = 1320  
 g) 7479 <  < 7485       : .....

**1**

Fill in the missing numbers.

a)  $\square \times 10 = 230$     b)  $75 \times \square = 7500$     c)  $27 \times \square = 27\,000$   
 $120 \times \square = 1200$      $\square \times 100 = 2200$      $\square \times 100 = 7500$   
 $445 \times 10 = \square$      $120 \times 100 = \square$      $85 \times 100 = \square$

**2**

Fill in the missing numbers and signs.

a)  $840 \div \square = 84$     b)  $7200 \div \square = 72$     c)  $9600 \div 100 = \square$   
d)  $\square \div 100 = 100$     e)  $1720 \square 10 = 172$     f)  $850 \square 10 = 8500$   
g)  $8500 \div \square = 85$     h)  $\square \times 1000 = 34\,000$

**3**

Write multiplications and divisions about the tables.

a)

H Th	T Th	Th	H	T	U
				5	3
			5	3	0
		5	3	0	0
	5	3	0	0	0
5	3	0	0	0	0

b)

H Th	T Th	Th	H	T	U
8	0	7	0	0	0
	8	0	7	0	0
		8	0	7	0
			8	0	7

$53 \times 10 =$  .....

$53 \times 100 =$  .....

.....

.....

.....

$807\,000 \div 10 =$  .....

$80\,700 \div 100 =$  .....

.....

.....

.....

**4**

You have these number cards.     $\square 2 \square 3 \square 4 \square 0 \square 0 \square 0$

Use them to make, where possible, two different 6-digit numbers which are:

- a) divisible by 10: .....
- b) divisible by 10, but not by 100: .....
- c) divisible by 100, but not by 10: .....
- d) not divisible by 10: .....

**1**

Write the units of measure that you know in the correct place in the table.

Number of times, or the fraction of, the basic unit	1000	100	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
<i>Units of length</i>				metre (m)			
<i>Units of mass</i>				gram (g)			
<i>Units of capacity</i>				litre (l)			

**2**

- a) Write a label for each set.
- b) Add a quantity of your own to each set.

**Quantities**

**3**

Convert the quantities.

- a) 3 km =  m
- b) 12 km =  m
- c) 5 and a half km =  m
- d) 17 m 80 cm =  cm
- e) 3 half metres =  cm
- f) 3 quarters of a metre =  cm
- g) 5 m =  mm
- h) 32 m 4 cm =  mm
- i) 2 fifths of a metre =  mm
- j) 3000 ml =  litres
- k) 2500 ml =  litres
- l) 2500 cl =  litres
- m) 10 000 g =  kg
- n) 3500 g =  kg

**4**

Fill in the missing items.

- a)  litres = 4000 ml =  cl
- b) 31 kg =  g
- c) 70 m = 7000  =  mm
- d)  cm = 13 m = 13 000
- e) 3 000 000 g = 3000  = 3
- f) 5000 ml =  m =  g (!)

**1**

Start from point **A** on the straight line. Follow the instructions.



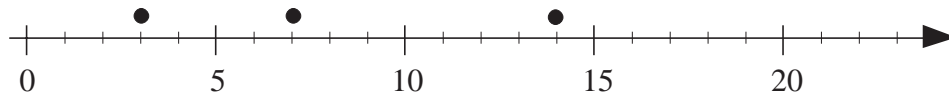
- a) Move 2 cm to the right. Label that point **B**.
- b) From **B**, move 7 cm 3 mm to the right. Label that point **C**.
- c) From **C**, move 10 cm to the left. Label that point **D**.
- d) From **D**, move 3 cm 3 mm to the left. Label that point **E**.
- e) From **E**, move 8 cm 5 mm to the right. Label that point **F**.

How far in which direction is point **F** from point **A**? .....

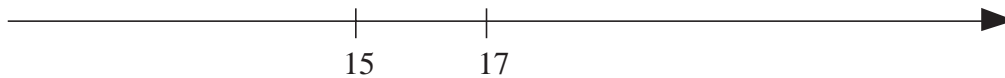
**2**

Use a ruler.

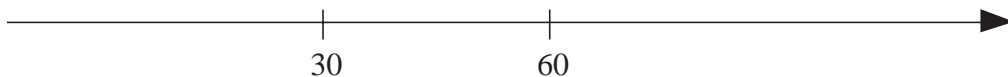
- a) Write the correct number below each dot.



- b) Mark and label the positions of 16 and 23.



- c) Mark and label the positions of 100 and 0.



**3**

Use a ruler and/or a pair of compasses.

Check whether each number line is accurate. If it is, tick it but if it is not, correct it.

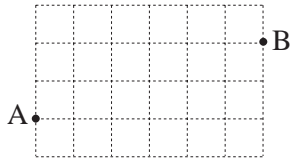


**4**

Where is the position of 3 on this number line?



1



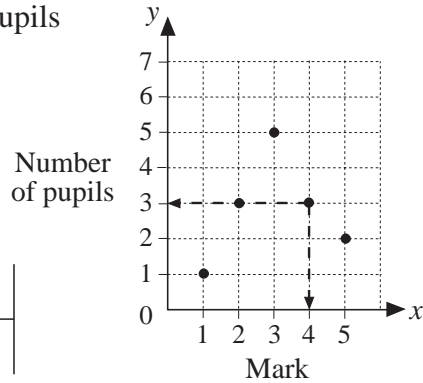
- a) How many units long is the shortest route from A to B along the grid lines?
- b) How many such routes can you find?

2

The graph shows the marks scored by a class of 14 pupils in a test which had 5 marks in total.

For example, 3 pupils scored 4 marks, or 4 marks were scored by 3 pupils.

So this data point has coordinates (4, 3).



a) Complete the table.

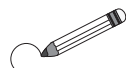
Mark	1	2	3	4	5
Number of pupils				3	

- b) i) Which mark did most pupils score? This is the **mode**.
- ii) How many pupils scored it?
- c) List the marks of every pupil in increasing order in your exercise book.
- d) Calculate the **mean** in your exercise book and write it here.

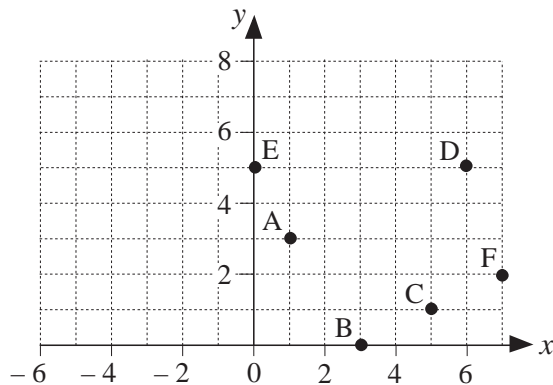
3

There are two mistakes in this graph.

Circle the incorrect points and draw them again in the correct position.



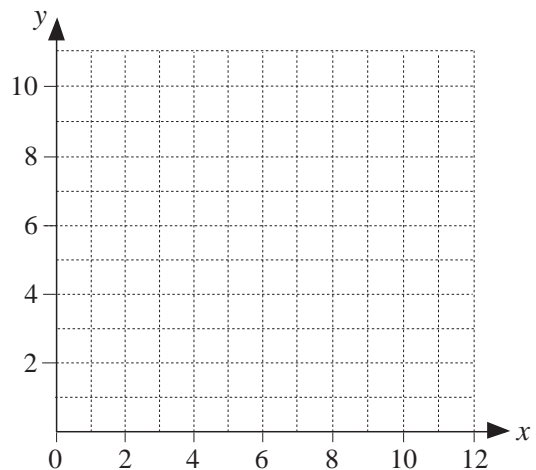
- A (3, 1)
- B (3, 0)
- C (5, 1)
- D (6, 5)
- E (0, 5)
- F (2, 7)



4

Mark these points with dots on the graph.

- A (2, 8); B (7, 1); C (3, 3);
- D (4, 0); E (6, 0); F (0, 0);
- G (4 rounded to the nearest 10,  $40 \div 10$ )
- H (13 rounded to the nearest 10,  $900 \div 100$ )



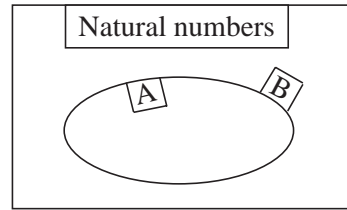
**1**

The base set contains the **natural** numbers.

Set A contains numbers less than 10.

a) List the elements of Set A.

$A = \{ \dots \}$



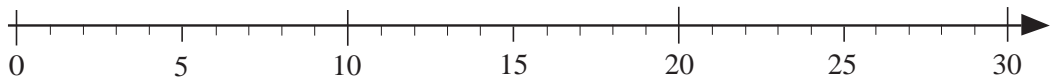
b) If the number of elements in Set A is  $n$ , complete this statement.  $n \square 10$

c) List the elements in Set B.  $B = \{ \dots \}$

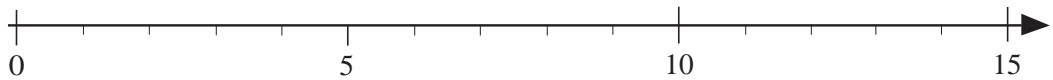
**2**

The base set is the set of **natural** numbers. Write an inequality about  $x$ ,  $y$  and  $z$  using  $<$ ,  $>$ ,  $\leq$  or  $\geq$  and show it on the number line.

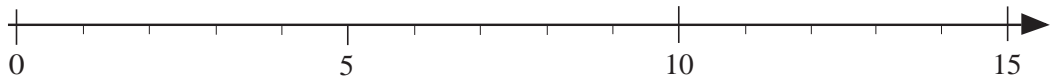
a)  $x$  is less than or equal to 17. ....



b)  $y$  is less than 8. ....



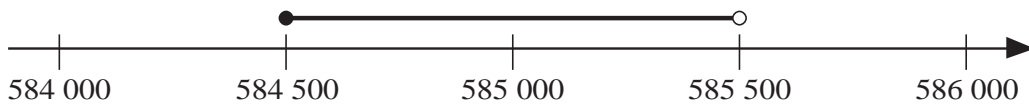
c)  $z$  is at least 7 and at most 10. ....



**3**

If the population of a country, rounded to the nearest 1000, is 585 000, then it means:

$$584\,500 \leq \text{population} < 585\,500$$



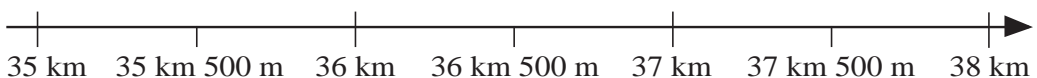
The **actual** population is a natural number somewhere on the segment shown.

a) Answer this question by writing an inequality.

The length of a room was measured as 530 cm, rounded to the nearest 10 cm. What could the actual measurement be?

.....

b) The distance from John's house to his work is 37 km, rounded to the nearest km. What could the actual distance be? Show it on the number line.



**1**

Write an operation for each problem and do the calculation.

a) 15 girls and 16 boys went on a trip. How many children went on the trip?

.....

b) The school organised two trips. 27 pupils went to Dartmoor, 9 less than those who went to Exmoor. How many pupils went to Exmoor?

.....

**2**

Do these calculations in your exercise book and write only the answers here.

a)  $87 - 22 =$

b)  $103 + 68 =$

c)  $122 - 48 =$

d)  $4013 + 482 =$

e)  $500 + 600 + 900 =$

f)  $3000 - 570 =$

g)  $3072 + 8318 + 686 + 1324 =$

**3**

Do these calculations in your exercise book and write only the answers here.

a)  $4400 + 600 + 960 + 1040 =$

b)  $2050 - 580 =$

c)  $7305 + 95 + 551 + 1049 =$

d)  $6000 - 3700 =$

e)  $2600 + 2040 + 25 + 375 =$

f)  $3000 - 570 =$

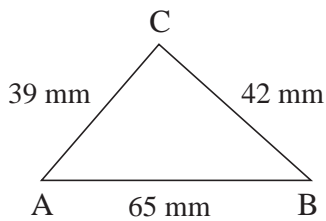
g)  $3072 + 8218 + 686 + 1324 =$

h)  $1660 - 760 =$

**4**

Calculate the perimeter of each polygon in your exercise book. Write the answer here.

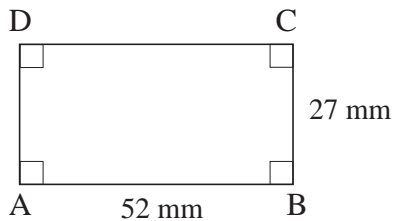
a)



*Not drawn to scale!*

P = .....

b)



P = .....

**5**

Ann has £758, Betty has £1439 and Carol has £549. How much do they have altogether?

Estimate by rounding to the nearest £100, write the amounts in the place-value table, do the calculation and write the answer in a sentence.

E: .....

Answer: .....

.....

	Th	H	T	U
A				
B				
C				
Total				



**1**

Estimate first by rounding to the nearest 100, then calculate.

- a) *E:* ..... b) *E:* ..... c) *E:* .....

1	4	2
3	1	3
+	4	4
1		

1	5	2	6
3	8	0	4
+	2	4	3

	4	5	3
	7	0	9
+	3	4	5

- d) *E:* .....

	3	5	6	7
			3	4
1	1	5	8	9
+	9	0	7	8

**2**

Write each addition in column form, then do the calculation.

- a)  $345 + 276 + 516 + 1018$       b)  $2305 + 4076 + 291 + 1000$



- c)  $5077 + 9246 + 260 + 8705$       d)  $1010 + 8 + 26 + 3004$



- e) Seven thousand, three hundred and fifteen  
+ eight hundred and ninety-one  
+ three hundred + fifty-five


**3**

Estimate first by rounding to the nearest 100, then do the calculation.

- a) *E:* ..... b) *E:* ..... c) *E:* ..... d) *E:* .....

5	6	7
-	4	5

4	4	5	3
-		7	0

7	5	0	3	8
-		2	8	9

1	3	0	6	7
-		6	0	9

**4**

Write each subtraction in column form, then do the calculation.

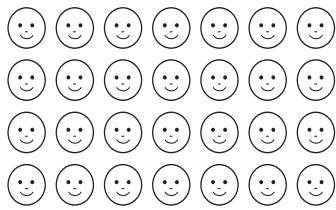
- a)  $5678 - 2451$       b)  $8636 - 3452$       c) the difference between 8675 and 3456




<p><b>1</b></p>	<p>a) Ted spent 310 p in the morning and 490 p in the afternoon. Bob spent 490 p in the morning and 310 p in the afternoon. How much did they each spend?            Ted: _____ Bob : _____</p> <p>b) Complete this sentence. The terms of an addition are .....</p>
<p><b>2</b></p>	<p>Do the calculations by grouping the terms in the easiest way.</p> <p>a) <math>49 + 63 + 17 = \dots\dots\dots</math></p> <p>b) <math>47 + 21 + 53 + 19 = \dots\dots\dots</math></p> <p>c) <math>354 + 106 + 14 + 46 = \dots\dots\dots</math></p>
<p><b>3</b></p>	<p>Dad earned £6870 and won £546 on the lottery. He spent £250 on presents for the family and £70 on books. Then he calculated how much he had left.</p> <p>Tick the plans which he might have used.</p> <p>a) <math>6870 + 546 - 250 - 70</math>                      b) <math>6870 + (546 - 250 - 70)</math></p> <p>c) <math>(6870 + 546) - (250 - 70)</math>                d) <math>6870 + 546 - (250 + 70)</math></p>
<p><b>4</b></p>	<p>a) Cathy had £375 and spent £125. Linda had £125 and spent £375. How much money do they each have now?            Cathy: _____ Linda: _____</p> <p>b) Complete this sentence.            In a subtraction, the <b>reductant</b> and the <b>subtrahend</b> are <input type="text"/> inter-changeable, unless they are equal.</p>
<p><b>5</b></p>	<p>Write a plan for each calculation, using brackets where necessary.</p> <p>I have £48 in my right pocket and £17 in my left pocket.</p> <p>a) How much do I have altogether? .....</p> <p>b) How will the amount change if I:</p> <p>i) put another £52 in my right pocket .....</p> <p>ii) take out £10 from my left pocket .....</p> <p>iii) put another £8 in both pockets .....</p> <p>iv) take £8 out of both pockets? .....</p> <p>c) If I put another £15 into my left pocket, how should I change the amount in my right pocket so that the total amount does not change? .....</p>

**1**

The pupils in a class are sitting in this formation. How many pupils are in the class?



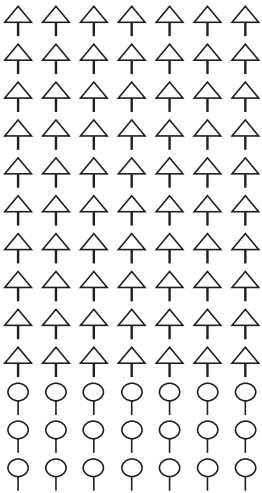
Write it as an addition and a multiplication in two ways.

$7 + \dots = \square \times \square = \square$

$4 + \dots = \square \times \square = \square$

Complete this sentence. The  of a multiplication are inter-changeable.

**2**



A farmer planted 10 rows of peach trees and 3 rows of cherry trees in his orchard. He planted 7 trees in each row. How many trees did he plant altogether?

Write different plans for calculating the answer.

.....

.....

.....

.....

.....

.....

**3**

Complete the multiplication table.

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0		
1	0	1		3			6	7	8	9			12
2	0	2		6								22	
3	0	3		9			18	21	24	27			
4	0			12									
5	0			15									
6	0	6		18			36	42	48	54			
7	0	7		21			42	49	56	63			
8	0	8		24			48	56	64	72			
9	0	9		27			54	63	72	81			
10	0												
11		11											132
12			24							108			

**4**

Do these multiplications in a clever way in your exercise book.

- a)  $3 \times 4 \times 25$     b)  $5 \times 63 \times 20$     c)  $63 \times 77 \times 0$     d)  $1 \times 2 \times 4 \times 8$   
 e)  $1 \times 2 \times 3 \times 4 \times 5 \times 6$     f)  $5 \times 2 \times 7 \times 2 \times 7 \times 5$     g)  $2 \times 8 \times 125 \times 4$

**1** Do these calculations in a clever way.

- a)  $47 \times 6 =$  .....
- b)  $31 \times 19 =$  .....
- c)  $82 \times 13 =$  .....
- d)  $69 \times 20 =$  .....
- e)  $50 \times 4 \times 7 =$  .....

**2** Write plans and do the calculations.

An intercity express train is travelling at an average speed of 110 km per hour.  
A local train is travelling at an average speed of 70 km per hour.  
Both trains take 7 hours to complete their journeys.

- a) What distance do the two trains travel altogether?  
.....  
.....
- b) How much further does the intercity express train travel?  
.....  
.....

**3** Calculate the perimeter and area of these polygons. (They are not drawn to scale.)

a)  11 cm       $P =$  .....  
11 cm       $A =$  .....

b)  12 m       $P =$  .....  
45 m       $A =$  .....

**4** In this table, row *a* shows the length of a side of different squares and row *A* shows the area of the same squares.

Complete the table and write the rule.

<i>a</i>	1	2	3	4			7	8	9		11	12	
<i>A</i>	1	4	9		25	36				100			169

Rule:  $A =$  .....

**1**

Pete and Sue bought 5 bottles of juice and took back 5 empty bottles.

One bottle of juice cost 86 p but they got 6 p back for every empty bottle they returned.

Pete and Sue calculated how much they spent in different ways. Show how they did it.

Pete: ..... Sue: .....

.....  
 .....

**2**

Calculate  $327 \times 6$  in the place-value tables in two different ways.

Th	H	T	U
	3	2	7

Th	H	T	U
	3	2	7

**3**

Calculate  $43 \times 23$  in the place-value tables in different ways.

a)

H	T	U

←  $43 \times 20$   
 ←  $43 \times 3$

b)

H	T	U
	4	3

T	U
2	3

c)

H	T	U
	4	3

T	U
2	3

**4**

Calculate these products in any way you wish.

- |                    |                     |                      |                    |
|--------------------|---------------------|----------------------|--------------------|
| a) $70 \times 4 =$ | b) $82 \times 10 =$ | c) $68 \times 100 =$ | d) $25 \times 8 =$ |
| $75 \times 4 =$    | $82 \times 9 =$     | $68 \times 99 =$     | $250 \times 8 =$   |
| $75 \times 6 =$    | $82 \times 5 =$     | $68 \times 90 =$     | $25 \times 80 =$   |
| $75 \times 8 =$    | $82 \times 50 =$    | $68 \times 9 =$      | $25 \times 800 =$  |
| $80 \times 8 =$    | $82 \times 500 =$   | $68 \times 900 =$    | $25 \times 160 =$  |

*Calculations:*

**1**

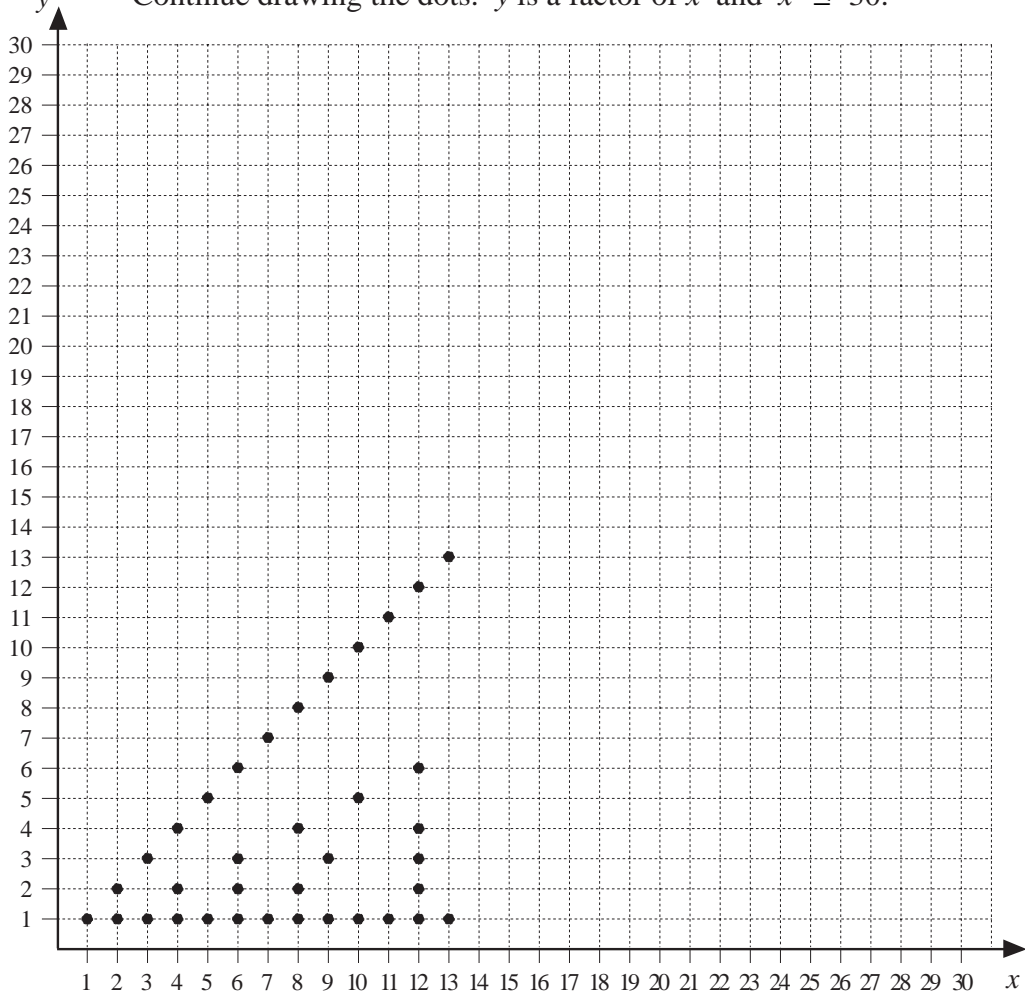
a) Complete the table to show how 24 flowers can be arranged in equal bunches.

Flowers per bunch	1	2	3	4			12	
Number of bunches	24	12			4	3		1

b) List the factors of 24. ....

**2**

a) Continue drawing the dots.  $y$  is a factor of  $x$  and  $x \leq 30$ .

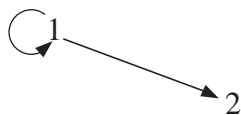


- b) Complete these statements.
- i)  $x$  is a  of  $y$
  - ii)  $A = \{\text{has exactly two factors}\} = \{ \dots \}$
  - iii)  $B = \{\text{has an odd number of factors}\} = \{ \dots \}$
  - iv)  $C = \{\text{has only one factor}\} = \{ \dots \}$

**3**

The arrows point towards the multiples.

Continue drawing the arrows.



3

9

12

2

8




**1**

Do these calculations in a clever way.

- a)  $27 \times 5 \times 20 = \dots\dots\dots$
- b)  $62 \times 15 = \dots\dots\dots$
- c)  $80 \times 25 = \dots\dots\dots$
- d)  $172 \times 4 \times 25 = \dots\dots\dots$
- e)  $374 \div 17 = \dots\dots\dots$
- f)  $998 \times 4 = \dots\dots\dots$
- g)  $135 \div 5 = \dots\dots\dots$
- h)  $183 + 1666 + 17 = \dots\dots\dots$

**2**

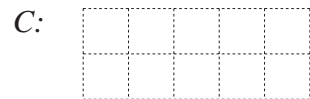
Calculate the perimeter and area of each of these polygons. (The diagrams are not drawn to scale.) Colour the shapes which are **similar**.

- a)   $4 \text{ cm}$        $P = \dots\dots\dots$   
 $17 \text{ cm}$        $A = \dots\dots\dots$
- b)   $11 \text{ m}$        $P = \dots\dots\dots$   
 $20 \text{ m}$        $A = \dots\dots\dots$
- c)   $16 \text{ mm}$        $P = \dots\dots\dots$   
 $68 \text{ mm}$        $A = \dots\dots\dots$

**3**

Workmen are putting up street lights at every 40 m along a new road. If the road is 820 m long, how many lamp posts will they need?

*Plan:*  $\dots\dots\dots$



*Answer:*  $\dots\dots\dots$

**4**

Continue the sequence for 3 more terms in both directions.

*Rule*

- a) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 175, 199, 223, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,
- b) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 1100, 995, 890, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,
- c) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 27, 81, 243, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,

**1**

Fill in the missing numbers. If there is a remainder, write it beside the box.

- a)  $73 \div 7 = \square$                       b)  $83 \div 10 = \square$   
 c)  $96 \div 16 = \square$                       d)  $144 \div \square = 10, r 4$   
 e)  $121 \div 10 = \square$                       f)  $66 \div 11 = \square$

**2**

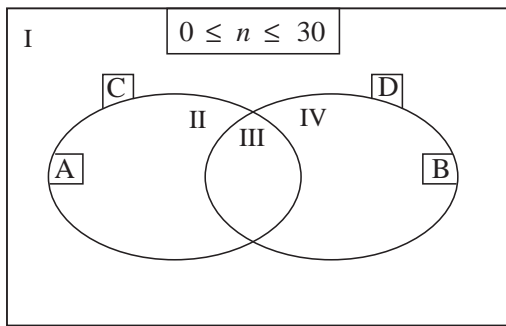
Write these numbers in the correct set.

15   30   41   77   80   92   104   150   300

a) Divisible by 2      b) Multiple of 4      c) Divisible by 5

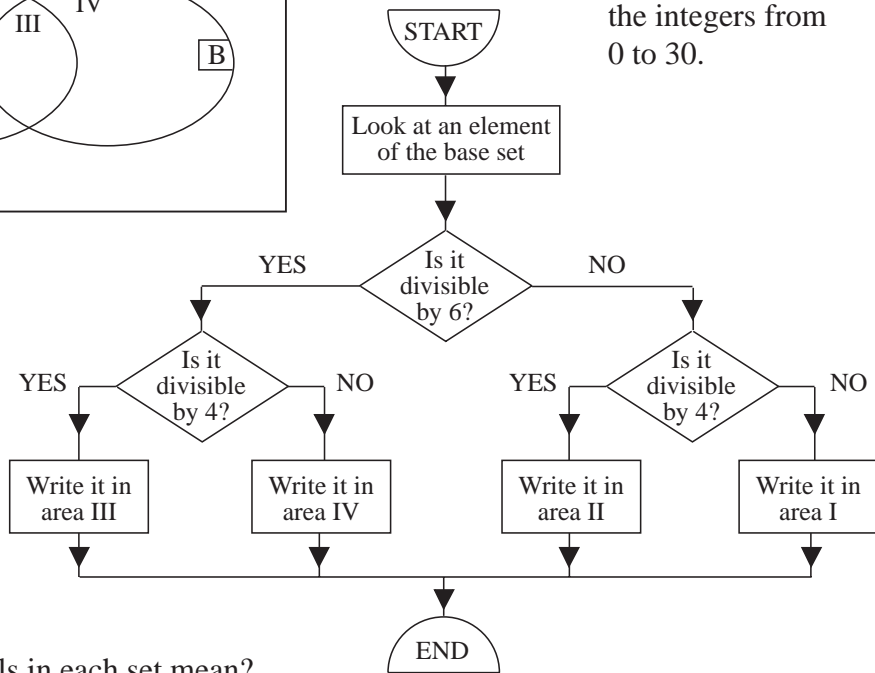
d) Multiple of 10      e) Divisible by 25      f) Multiple of 100

**3**



Fill in the **Venn** diagram by following the **flow chart**.

The base set contains the integers from 0 to 30.



What do the labels in each set mean?

- A = { ..... }      C = { ..... }  
 B = { ..... }      D = { ..... }



**1**

Solve the equations.

a)  $\square \times 7 = 63$   
 $x = \square$

b)  $\square \times 5 = 0$   
 $y = \square$

c)  $\square \times 0 = 8$   
 $z = \square$

d)  $\square \times 143 = 143$   
 $u = \square$

**2**

Fill in the missing numbers. Compare the results in each row.

- a)  $(12 + 10) \times 5 = \square$      $12 + 10 \times 5 = \square$      $12 \times 5 + 10 \times 5 = \square$
- b)  $32 \times 3 - 12 \times 3 = \square$      $(32 - 12) \times 3 = \square$      $32 - 12 \times 3 = \square$
- c)  $72 \div 8 + 24 \div 8 = \square$      $(72 + 24) \div 8 = \square$      $72 + 24 \div 8 = \square$
- d)  $(32 - 12) \div 4 = \square$      $32 \div 4 - 12 \div 4 = \square$      $32 - 12 \div 4 = \square$
- e)  $(42 - 10) + 5 = \square$      $42 - 10 + 5 = \square$      $42 - (10 + 5) = \square$
- f)  $(10 \times 8) \times (25 \times 8) = \square$      $(10 \times 25) \times 8 = \square$      $10 \times 25 \times 8 = \square$
- g)  $42 \times 12 \div 3 = \square$      $(42 \div 12) \times 3 = \square$      $42 \times (12 \div 3) = \square$

**3**

In November, a family spent £780 on heating and £1320 on food.

How much did the family spend on average on heating and food each day during that month?

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

*Answer:* .....

**4**

a) Complete the diagram, then write a plan. Do the calculation and check the result.

Along an 850 m route a marker was placed at each 50 m.  
 How many markers were needed?



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

*Answer:* .....

b) How much time is needed to boil 16 eggs if it takes 4 minutes to boil one egg?

*Answer:* .....

**1**

Do the calculations (in your exercise book if you need more space) and write the results.

- a)  $36 \div 6 =$       b)  $38 \div 19 =$       c)  $480 \div 40 =$       d)  $490 \div 7 =$   
 e)  $51 \div 7 =$       f)  $38 \div 6 =$       g)  $420 \div 40 =$       h)  $490 \div 80 =$

**2**

Do the calculations and check the results.

- a) 

3	8	9

      b) 

4	8	9

      c) 

5	8	9

      d) 

6	8	9
- $89 =$         $89 =$         $89 =$         $89 =$

**3**

Do the calculations and check the results.

- a) 

7	9	6

      b) 

8	9	6

      c) 

2	1	5	9

      d) 

3	4	9	1

      e) 

9	4	9	1
- Check:*

**4**

Write a plan, do the calculation and check the result. Write the answer in a sentence.

A baker needs 7 kg of flour to make 175 rolls.

- a) How many rolls can be made with 1 kg of flour?
- b) How much flour is needed to make one roll?

**1**

Do the divisions in column form and check them.

a)  $123 \div 9$



b)  $123 \div 10$



c)  $123 \div 11$



d)  $123 \div 12$



**2**

Do the divisions and check them.

a)

6	9	9	8


b)

6	9	9	9


c)

6	1	0	0	0


d)

6	1	0	0	1


e)

6	1	0	0	2


**3**

Do the divisions in any order you wish as quickly as you can in your exercise book. Write only the results here.

a)  $983 \div 8 =$

b)  $878 \div 9 =$

c)  $789 \div 10 =$

d)  $576 \div 70 =$

e)  $576 \div 27 =$

f)  $12\,121 \div 11 =$

**4**

In your exercise book, write a plan, do the calculation and check the result. Write the answer in a sentence here.

a) If I divided up my pocket money so that I had the same amount for 6 days, I would have 142 p each day and 3 p would be left over.

How much would remain if I divided up my pocket money equally over 7 days?

Answer: .....

b) I bought a length of material for £48 60 p. If it cost £1 80 p per metre, how many metres did I buy?

Answer: .....

**1**

Write these numbers in the appropriate sets.

20 300 55 60 110 27 64 100 125 324 10 900

Divisible by 3

Divisible by 4

Divisible by 5

Multiple of 10

Multiple of 25

Multiple of 100

**2**

Do the divisions in column form and check them. Write the results here.

a)  $217 \div 3 =$

b)  $217 \div 5 =$

c)  $217 \div 7 =$

d)  $392 \div 6 =$

e)  $392 \div 5 =$

f)  $392 \div 9 =$

**3**

a)  $a + 1462 = 2000$

b)  $b - 357 = 569$

c)  $3143 - c = 606$

$a =$

$b =$

$c =$

d)  $19 \times d + 2 = 40$

e)  $e \div 24 - 5 = 5$

f)  $2693 \times f = 0$

$d =$

$e =$

$f =$

**4**

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

Cinema tickets cost £2 60 p for adults and £1 90 p for children.

a) How much would it cost a family of 2 adults and 2 children to go to the cinema?

Answer: .....

b) John is 10 years old and has been given a cinema token worth £20 for his birthday. How many friends could he take with him to the cinema using his token?

Answer: .....

**5**

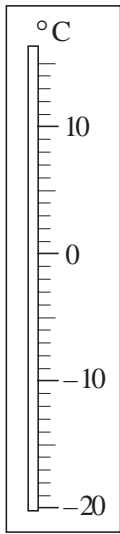
The arrows point towards the **factors**.

Continue drawing the arrows.



**1**

Use the thermometer diagram to help you work out how the temperatures change.



- a) The temperature is  $-3^{\circ}\text{C}$ , *New temperature*  
 then: i) it rises by  $2^{\circ}\text{C}$  .....  
 ii) it rises by  $3^{\circ}\text{C}$  .....  
 iii) it rises by  $10^{\circ}\text{C}$  .....  
 iv) it falls by  $2^{\circ}\text{C}$  .....
- b) The temperature is  $3^{\circ}\text{C}$ ,  
 then: i) it falls by  $2^{\circ}\text{C}$  .....  
 ii) it falls by  $3^{\circ}\text{C}$  .....  
 iii) it falls by  $10^{\circ}\text{C}$  .....

**2**

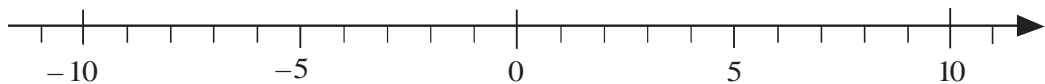
Write each person's balance as one amount of money.

- a) Mike has £18 in cash and is £12 in debt.  
 $\text{① ① ① ① ① ① ① ① ① ①}$   
 $\text{① ① ① ① ① ① ①}$   
 $\text{[-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1]}$   
 $\text{[-1] [-1]}$   
*Balance*
- b) Nick has £12 in cash and is £18 in debt.  
 $\text{① ① ① ① ① ① ① ① ① ①}$   
 $\text{① ①}$   
 $\text{[-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1]}$   
 $\text{[-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1]}$   
*Balance*
- c) Luke has £16 in cash and is £16 in debt.  
 $\text{① ① ① ① ① ① ① ① ① ①}$   
 $\text{① ① ① ① ① ①}$   
 $\text{[-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1] [-1]}$   
 $\text{[-1] [-1] [-1] [-1] [-1] [-1]}$   
*Balance*

**3**

a) Mark the **opposite** numbers of this set on the number line.

$\{-7, 10, 0, 11, -10, 5, 7\}$



b) Write the actual values in the boxes, then write the **opposite** values beside them.

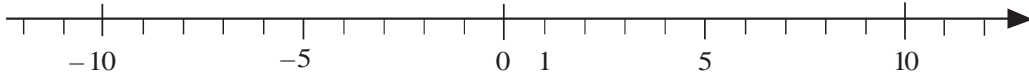
i)  $-(+7) = \square$  ..... ii)  $-(-3) = \square$  ..... iii)  $-(0) = \square$  .....

**4**

- a) 1, 2, 3, 4, 5, ... are  whole numbers or  numbers.  
 b)  $-1, -2, -3, \dots$  are  whole numbers.

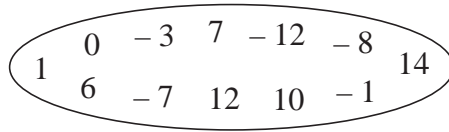
**1**

- a) Mark the terms of this sequence in *red* on the number line.  
The first term is  $-8$ . The following terms are 3 more than the previous term.
- b) Mark the terms of this sequence in *blue*.  
The first term is  $+10$ . The following terms are 4 less than the previous term.
- c) Mark the numbers exactly divisible by 3 in *green*.



**2**

From this set:

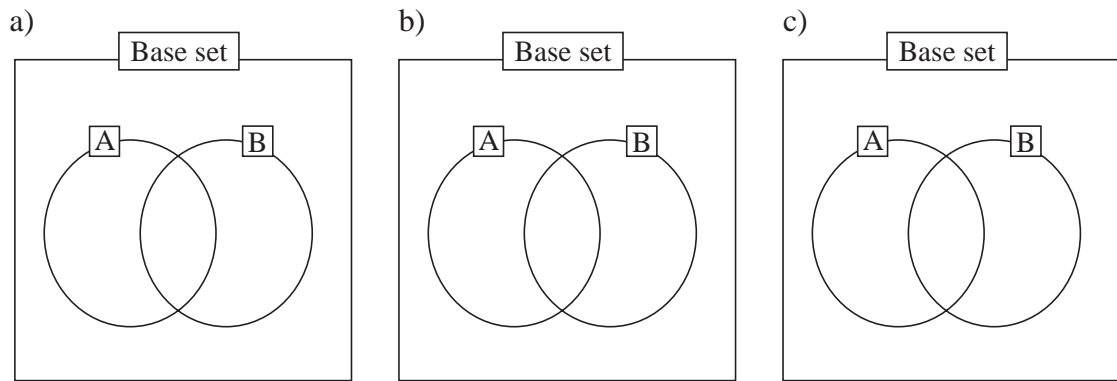


- a) list the numbers less than  $-1$  .....
- b) list the numbers not more than 1 .....
- c) list the numbers more than or equal to  $-7$  .....
- d) list the pairs of opposite numbers. ....

**3**

The base set is :  $U = \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}$

Write the numbers in the Venn diagrams.



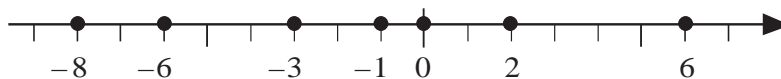
A = {negative numbers}  
B = {positive numbers}

A = {at least zero}  
B = {at most zero}

A = {more than  $-3$ }  
B = {less than 4}

**4**

Put the numbers marked in order.



- a)  <  <  <  <  <  <
- b)  >  >  >  >  >  >

**1**

Work out the rule and complete the table. Write the rule in different ways.

<i>a</i>	2	-1	2	5	-3		4	0	7	-4	
<i>b</i>	5	-4	-6	0	3	1		-8		11	-4
<i>c</i>	7	-5	-4			8	-3		0		2

Rule:  $c =$                        $a =$                        $b =$

**2**

Use this counting strip to help you work out the sums and differences.

-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12

$$\begin{array}{l}
 3 - 1 = \qquad 2 - 0 = \qquad 5 - 3 = \qquad 9 - 7 = \qquad 12 - 10 = \\
 1 - (-1) = \qquad 0 - (-2) = \qquad -1 - (-3) = \qquad -2 - (-4) = \qquad -3 - (-5) = \\
 2 - 4 = \qquad 3 - 5 = \qquad 6 - 8 = \qquad 1 - 3 = \qquad 0 - 2 = \\
 -1 - 1 = \qquad -2 - 0 = \qquad -3 - (-1) = \qquad -5 - (-3) = \qquad -8 - (-6) = \\
 2 + 3 = \qquad 2 + 5 = \qquad 2 + 10 = \qquad 2 + (-2) = \qquad 2 + (-5) = \\
 -2 + 0 = \qquad -2 + 1 = \qquad -2 + 2 = \qquad -2 + 3 = \qquad -2 + 7 = \\
 -2 + (-1) = \qquad -2 + (-2) = \qquad -2 + (-5) = \qquad -2 + (-9) = \qquad -2 + (-4) =
 \end{array}$$

**3**

Work out the rule and complete the table. Fill in the word missing from the statement.

<i>x</i>	5	6	-2	5	-2	4	2	8	-3	3	-2	-5	6
<i>y</i>	5	3	0	-2	5	9	-5	-8	10	-10	-5	-2	-6
<i>z</i>	0	3	2	7	7								

$z$  is the  between  $x$  and  $y$

**4**

Solve the inequalities if the solutions are integer numbers.

- a)  $\square \geq -5$                        $\square$  : .....
- b)  $\triangle < 3$                        $\triangle$  : .....
- c)  $-5 < \bigcap < 2$                        $\bigcap$  : .....
- d)  $-7 < \bowtie$  and  $\bowtie < -1$                        $\bowtie$  : .....
- e)  $2 < \heartsuit$  or  $\heartsuit < -3$                        $\heartsuit$  : .....

**1**

Work out the rule and complete the table. Write the rule in different ways.

$a$	-5	3	-2	6	-1		0		11	-44
$b$	5	-3	2			-8		3		

$b =$

$a =$

$a + b =$

**2**

Work out the rule and complete the table. Fill in the words missing from the statement.

$x$	-7	-6	-5			-2		0	1	2	3		5
$y$	7	6		4	3		1		1	2		4	

$y$  is the  of  $x$  from

**3**

Decide whether the statement is true or false and write a ✓ or a ✗ in the box.

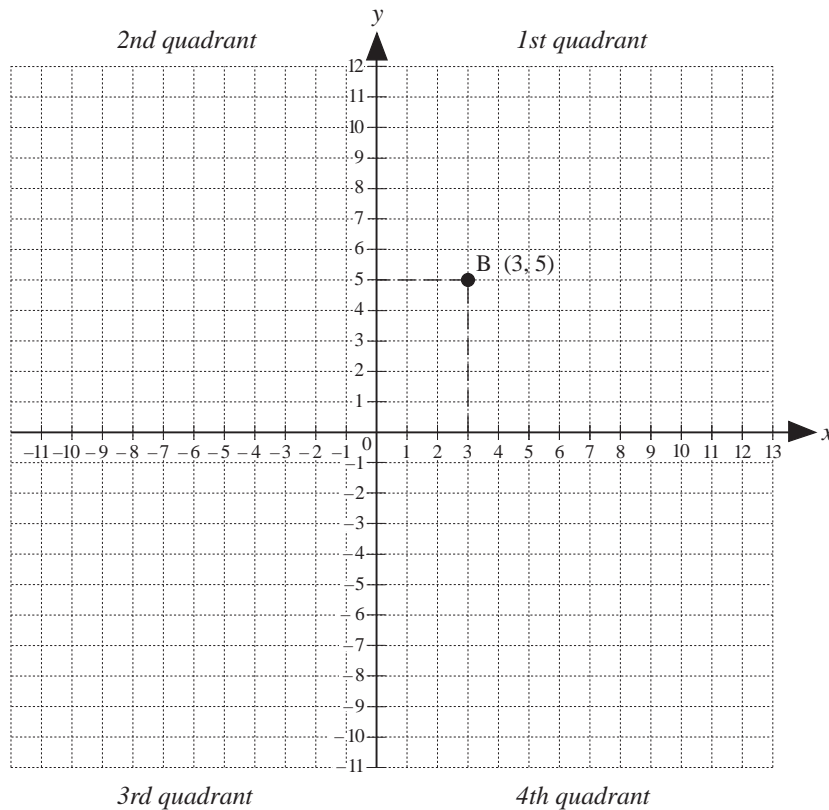
- a) Any integer number is greater than its opposite number.
- b) There is a number which is greater than its opposite number.
- c) There is a number which is as far from 5 as it is from the opposite of 5.
- d) The greater of two negative numbers is the number closer to zero.

**4**

a) Plot these points on the graph.

- A (0, 8)
- B (3, 5)\*
- C (5, 3)
- D (8, 0)
- E (0, 0)

\* already drawn



- b) Plot all the points which are 5 units from the  $y$ -axis and 3 units from the  $x$ -axis.
- c) Plot all the points which are 3 units from the  $y$ -axis and 5 units from the  $x$ -axis.



11

Decide whether the statement is true or false and write a T or an F in the box.

- a) Any positive number is an integer.
- b) There is a number which is 2 less than its opposite number.
- c) Zero can be positive or negative.
- d) The greater of two positive numbers is the number furthest from zero.

22

Which is more? Fill in the missing signs.

- a) 4.5 m  45 cm      b) 91 kg  910 g      c) 1800 sec.  3 min
- d)  $-4 - 4$    $-4 + (-4)$       e) £150 20 p  1502 p
- f)  $12 - 14$    $14 - 12$       g)  $-1 + (-2)$    $-2 + 1$       h)  $0 \div 7$    $0 \div 2$

33

Fill in the missing numbers.

- a) 8 is more than 0 by        $8 - 0 =$          $+ 0 = 8$
- b)  $-8$  is less than  by 8       $-8 - 0 =$          $+ 0 = -8$
- c) 8 is more than 2 by        $8 - 2 =$          $+ 2 = 8$
- d) 8 is more than  $-3$  by        $8 - (-3) =$          $+ (-3) = 8$
- e)  $-3$  is more than  $-7$  by        $-3 - (-7) =$          $+ (-7) = -3$
- f) 4 is less than  by 9       $4 - 13 =$          $+ 13 = 4$
- g)  $-2$  is less than 3 by        $-2 - 3 =$          $+ (-3) = -2$

44

Work out the rule and complete the table. Write the rule in different ways.

<i>r</i>	-7	-6	-5			-2		0	1	2	3		5
<i>s</i>	9	8	7	6	5		3					-2	

$r =$

$s =$

$r + s =$



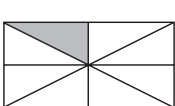
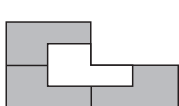


55

What could the temperatures be? Answer by writing an inequality.

- a) The temperature is more than  $-5^{\circ}\text{C}$  but less than  $-2^{\circ}\text{C}$ . . . . .
- b) The temperature is less than  $2^{\circ}\text{C}$  but is at least  $-1^{\circ}\text{C}$ . . . . .
- c) The temperature is not more than  $10^{\circ}\text{C}$   
and is not less than  $-1^{\circ}\text{C}$ . . . . .

**1**

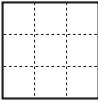

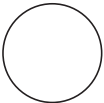
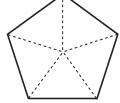
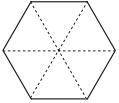
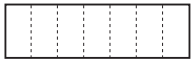
What part of the shapes are shaded?

a)  b)  c)  d)  e)  f) 

.....

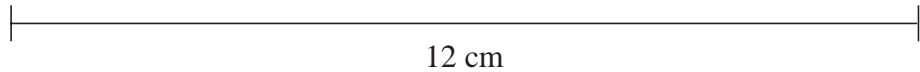
**2**

Colour the given fraction of each shape.

a)   $\frac{1}{3}$     b)   $\frac{1}{2}$     c)   $\frac{3}{4}$     d)   $\frac{2}{5}$     e)   $\frac{5}{6}$     f)   $\frac{3}{7}$

**3**

a) Draw lines which are: i)  $\frac{1}{6}$     ii)  $\frac{5}{6}$     iii)  $\frac{7}{6}$  of the length of this 12 cm line segment.



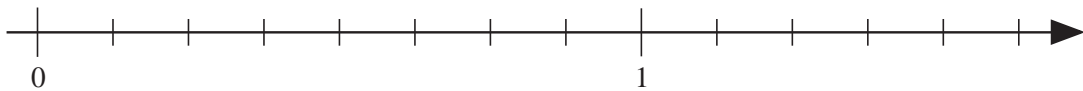
- i) .....
- ii) .....
- iii) .....

b) Write their lengths below the lines.

**4**

Mark the positions of these fractions on the number line.

$$\frac{1}{8}, \frac{1}{2}, \frac{3}{4}, \frac{7}{8}, \frac{9}{8}, \frac{5}{4}, \frac{5}{8}, \frac{12}{8}$$



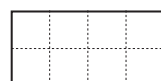
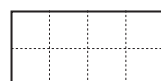
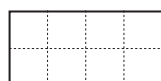
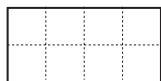
**5**

Which would give you more chocolate?

$\frac{3}{8}$  of one bar

or

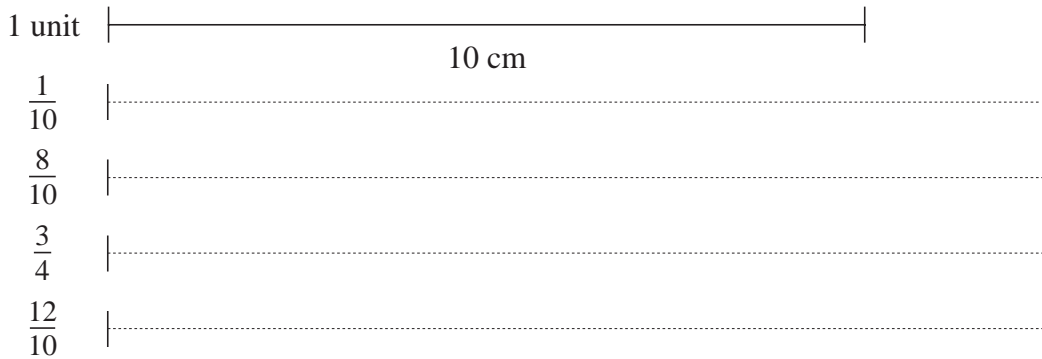
$\frac{1}{8}$  of 3 bars



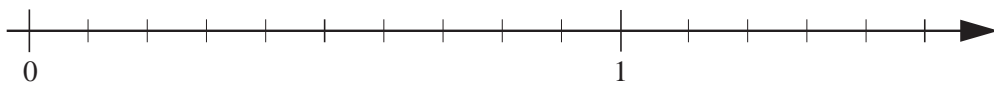
Answer: .....

**1**

a) Use a ruler to draw the required parts of this 10 cm line segment.



b) Mark the fractions on the number line.



**2**

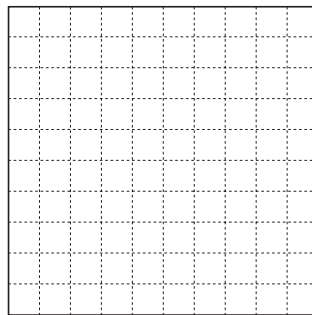
Colour:

a)  $\frac{1}{10}$  of the square in *red*

b)  $\frac{30}{100}$  of the square in *blue*

c)  $\frac{2}{5}$  of the square in *yellow*

d)  $\frac{13}{100}$  of the square in *green*.



$$\frac{1}{10} = \frac{\quad}{100}$$

$$\frac{2}{5} = \frac{\quad}{10} = \frac{\quad}{100}$$

What part is not coloured? .....

**3**

In your exercise book, calculate these parts of a 72 cm line segment and write the lengths in the boxes.

a)  $\frac{2}{6}$

b)  $\frac{5}{6}$

c)  $\frac{9}{6}$

**4**

Write an operation for each part. Give the answer as a fraction or a whole number.

a) One seventh of three units: .....

b) The ratio of 3 to 10: .....

c)  $\frac{3}{4}$  of 100: .....

d) The ratio of 15 to 8: .....

e) 1 fifth of 1 third of 1 unit: .....

f) 1 third of 1 fifth of 1 unit: .....

g) 32 divided by 100: .....

**1**

Write the decimal numbers in the place-value table, then write the numbers as the sum of a whole number and a fraction.

Th	H	T	U	t	h	th

a) 16.07       $16 + \frac{7}{100} = 16 \frac{7}{100}$

b) 518.26      \_\_\_\_\_

c) 1001.108      \_\_\_\_\_

d) 0.058      \_\_\_\_\_

**2**

Write these numbers as decimals. Do necessary calculations in your exercise book.

- a)  $\frac{35}{10} =$       b)  $\frac{7}{100} =$       c)  $\frac{1003}{100} =$
- d)  $\frac{1003}{10} =$       e)  $\frac{89}{10} =$       f)  $83 + \frac{7}{10} =$
- g)  $\frac{3}{100} =$       h)  $\frac{68}{100} =$       i)  $\frac{527}{100} =$
- j)  $1 + \frac{1}{2} =$       k)  $15 + \frac{2}{5} =$       l)  $\frac{1}{4} =$
- m)  $\frac{6}{20} =$       n)  $143 + \frac{17}{50} =$       o)  $2\frac{3}{4} =$

**3**

Write these decimals as fractions.

- a) 3.01 =      b) 0.07 =      c) 103.9 =      d) 0.20 =
- e) 20.8 =      f) 101.101 =      g) 30.3 =      h) 1614.85 =

**4**

Express these measures as decimals.

- a) 1 cm =  m      b) 3 m 5 cm =  m      c) 10 g =  kg
- d) 2 m 12 mm =  cm =  m      e) 58 l 18 cl =  l
- f) 28 kg 300 g =  kg      g) 3 hours 6 minutes =  hours

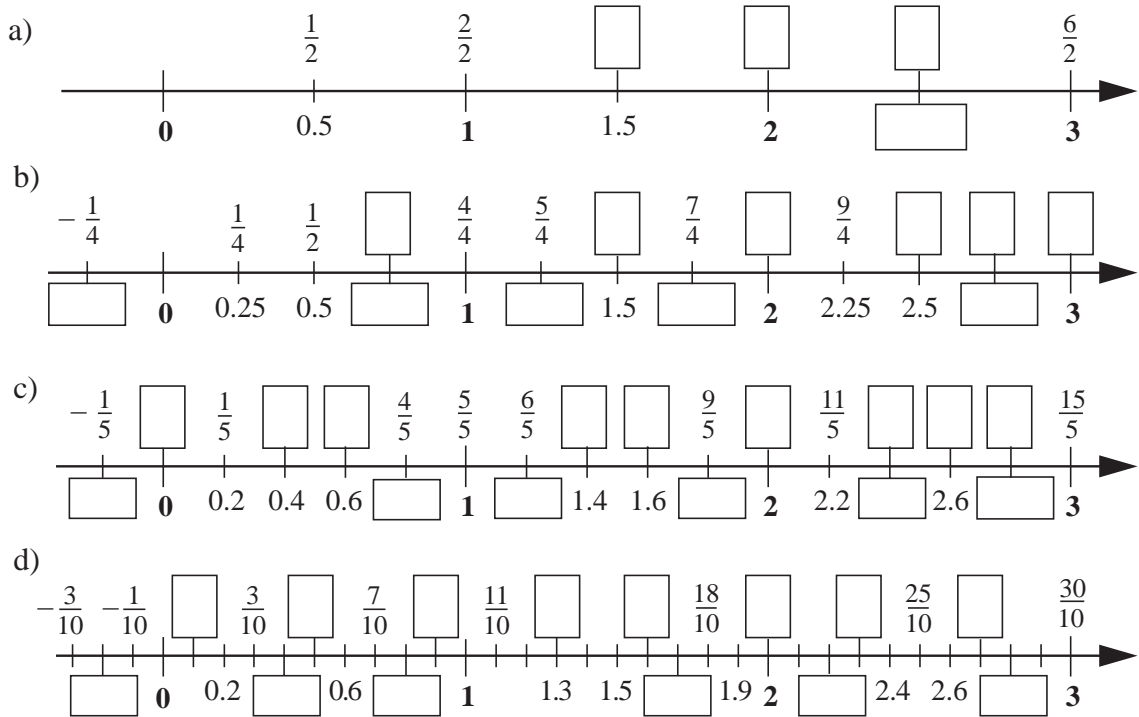
**5**

Express these amounts as:

- a) decimals:      i) £2 31 p = £       ii) 1810 p = £
- iii) £61 50 p = £       iv) 44 999 p = £
- b) £s and pence:      i) £18.04 = £   p      ii) 6549 p = £   p

**1**

Fill in the missing numbers.



**2**

Write the decimals as fractions with denominator 100. Fill in the missing signs.

- a)  $0.6$    $0.06$       b)  $0.7$    $0.70$       c)  $0.12$    $0.1$   
 $\frac{\quad}{100}$    $\frac{\quad}{100}$        $\frac{\quad}{100}$    $\frac{\quad}{100}$        $\frac{\quad}{100}$    $\frac{\quad}{100}$
- d)  $1.03$    $1.04$       e)  $0.04$    $0.3$       f)  $2.3$    $2.29$   
 $\frac{\quad}{100}$    $\frac{\quad}{100}$        $\frac{\quad}{100}$    $\frac{\quad}{100}$        $\frac{\quad}{100}$    $\frac{\quad}{100}$

**3**

Write three numbers which are between each given pair.

- a)  $5.3 < \quad < \quad < \quad < 5.5$       b)  $0.6 < \quad < \quad < \quad < 0.7$   
 c)  $1.9 < \quad < \quad < \quad < 2$       d)  $1.5 < \quad < \quad < \quad < 1.51$

**4**

Write the numbers in increasing order.

- a)  $0.2, 0.202, 2.02, 2.22, 20.2, 20.02, 2.002, 202.2$   
 .....
- b)  $0.001, -1, -1.01, -1.11, 0.1, -1.1, -10.1, 1.11$   
 .....

**1**

The line segment AB has been divided into 5 equal parts at the points C, D, E and F.



What fraction of AB is:

a) AD  $\frac{AD}{AB} = \square$  Draw it here. ....

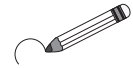
b) DE  $\frac{DE}{AB} = \square$  Draw it here. ....

c) AF  $\frac{AF}{AB} = \square$  Draw it here. ....

d) DB  $\frac{DB}{AB} = \square$  Draw it here. ....

**2**

Circle the numbers which are greater than 1.



$\frac{3}{5}$ ,  $\frac{8}{7}$ ,  $-3.4$ ,  $\frac{100}{100}$ ,  $\frac{19}{17}$ ,  $1.001$ ,  $1\frac{1}{4}$ ,  $-1099$ ,  $\frac{27}{4}$ ,  $\frac{5}{5}$

**3**

Write these decimals as mixed numbers or fractions.

a)  $8.08 =$       b)  $92.40 =$       c)  $0.6 =$       d)  $0.75 =$

e)  $17.01 =$       f)  $50.2 =$       g)  $0.0005 =$       h)  $3912.3 =$

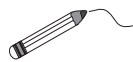
**4**

Express these quantities as decimals.

- a)  $796 \text{ cl} = \square$  litres      b)  $92 \text{ m } 45 \text{ cm} = \square$  m  
 c)  $9 \text{ km } 81 \text{ m} = \square$  km      d)  $3 \text{ m } 630 \text{ mm} = \square$  m  
 e)  $11 \text{ kg } 29 \text{ g} = \square$  kg      f)  $27 \text{ kg } 100 \text{ g} = \square$  kg  
 g)  $4 \text{ hours } 15 \text{ min.} = \square$  hours      h)  $3 \text{ hours } 6 \text{ min.} = \square$  hours

**5**

Join up the equal numbers.



$\frac{1}{8}$        $\frac{30}{100}$        $0.6$        $6\frac{1}{100}$        $\frac{8}{20}$   
 $0.3$        $\frac{3}{5}$        $6.1$        $0.125$        $6\frac{1}{10}$        $0.4$   
 $\frac{6}{20}$        $\frac{2}{5}$        $6.01$