Centre No.	1	2	4	3	0	Paper Reference								Surname	Initial(s)
Candidate No.	4	1	0	6		5	5	4	0	F	/	1	F	Signature	

Paper Reference(s)

5540F/1F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics A (Linear) – 2540

Paper 1 (Non-Calculator)

Foundation Tier

Thursday 6 November 2008 – Morning

Time: 1 hour 30 minutes

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 26 questions in this question paper. The total mark for this paper is 100.
There are 24 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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Turn over

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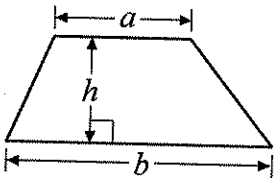
GCSE Mathematics (Linear) 2540

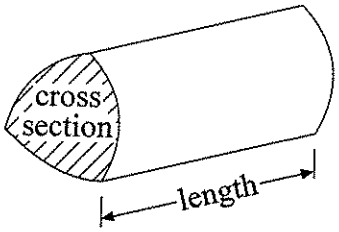
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section × length



Leave blank

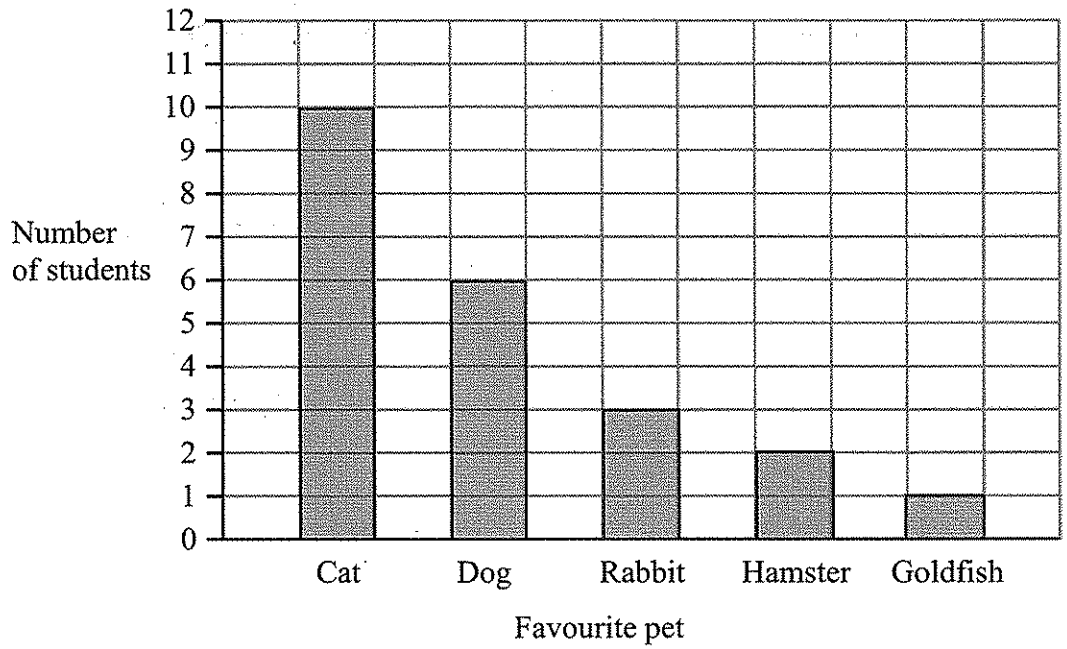
Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. Jessica asked some students to tell her their favourite pet.
She used the information to draw this bar chart.



(a) How many students said a rabbit?

3

(1)

(b) Which pet did most students say?

Cat

(1)

(c) Work out the number of students that Jessica asked.

10 + 6 + 3 + 2 + 1

22

(1)

Q1

(Total 3 marks)

Turn over

Leave blank

2. (a) Write the number **nine thousand, three hundred and seventy four** in figures.

9374

(1)

(b) Write the number 62 500 in words.

Sixty two thousand five hundred

(1)

(c) Write down the value of the **8** in the number 3285

80 (8) tens

(1)

(d) Write the number 2174 to the nearest hundred.

2200

(1)

(e) Write the number 7362 to the nearest thousand.

7000

(1)

Q2

(Total 5 marks)

Leave blank

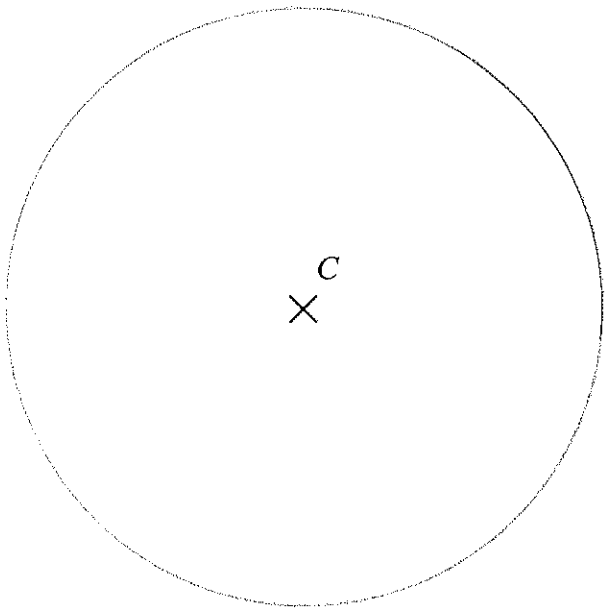
3. (a) Measure the length of the line AB.
Give your answer in centimetres.

7 ..... cm
(1)

(b) Mark the midpoint of the line AB with a cross (×).

(1)

(c) In the space below, draw accurately a circle of radius 4 cm.
Use the point C as the centre of your circle.

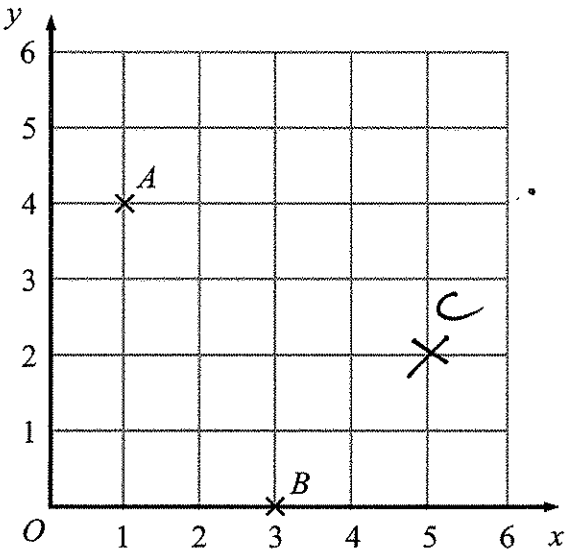


(1) **Q3**

(Total 3 marks)

Leave blank

4.



(a) (i) Write down the coordinates of point *A*.

(1 , 4)

(ii) Write down the coordinates of point *B*.

(3 , 0)

(2)

(b) On the grid, mark with a cross (x) the point (5, 2). Label this point *C*.

(1)

(Total 3 marks)

Q4

5. (a) Write down a sensible **metric** unit for measuring

(i) the distance from London to Paris,

Km

(ii) the amount of water in a swimming pool.

Litres

(2)

(b) (i) Change 5 centimetres to millimetres.

1cm = 10mm

50 mm

(ii) Change 4000 grams to kilograms.

1000g = 4kg

4 kg

(2)

(Total 4 marks)

Q5

Leave blank

6. Here is a list of 8 numbers.

3 5 6 8 9 10 11 16

From the list, write down

(a) **two** odd numbers,

any two from 3, 5, 9, 11

3 and 5

(1)

(b) **two** numbers with a sum of 15

6, 9 or 5, 10

6 and 9

(1)

(c) a factor of 12

any from 3, 6

3

(1)

(d) a multiple of 4

8 or 16

8

(1)

James says that 10 is a square number because $5^2 = 10$

(e) James is wrong.
Explain why.

$5^2 = 5 \times 5 = 25$

.....

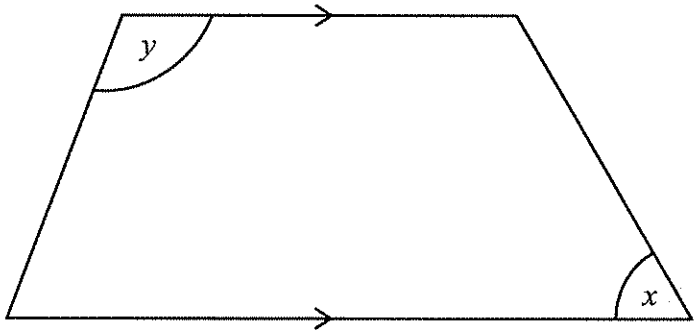
.....

(1) **Q6**

(Total 5 marks)

Leave blank

7.



(a) Write down the special name for this quadrilateral.

trapezium

(1)

(b) Measure the size of the angle marked x.

58 °

(1)

(c) Write down the special name for the angle marked y.

obtuse

(1)

Q7

(Total 3 marks)

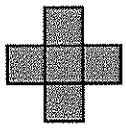
< 90 acute

90 – 180 obtuse

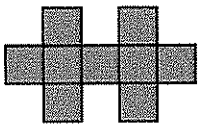
> 180 reflex

Leave blank

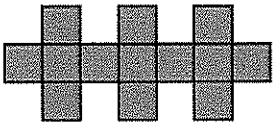
8. Here are some patterns made from squares.



Pattern number 1

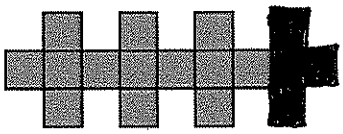


Pattern number 2



Pattern number 3

(a) The diagram below shows part of Pattern number 4
Complete the diagram for Pattern number 4



Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of squares	5	9	13	17	21

(1)

(c) Find the number of squares used for Pattern number 10

$10 \times 4 + 1 = 41$

or

41

.....

(1)

Q8

(Total 3 marks)

5 9 13 17 21 25 29 33 37 (41)

1

10th.

Leave blank

9.

Gift shop

Price list

Key ring	£3.20
Hat	£3.99
Pencil case	£2.70
Ruler	45p
Pen	60p
Pencil	

Keith buys 3 pens.

(a) Work out the total cost.

3 × 60p = 180
= £1.80

£ 1·80
(2)

Simon buys a pencil case, a ruler and a pen.
He pays with a £5 note.

(b) Work out how much change he should get.

£5 − 1·80 = £3·20

£ 3·20
(3)

The gift shop also sells pencils.

The price of a pencil is $\frac{2}{3}$ of the price of a pen.

(c) Work out the price of a pencil.

$\frac{2}{3} \times 60 = 2 \times 20$

(⅓ of 60 = 20)

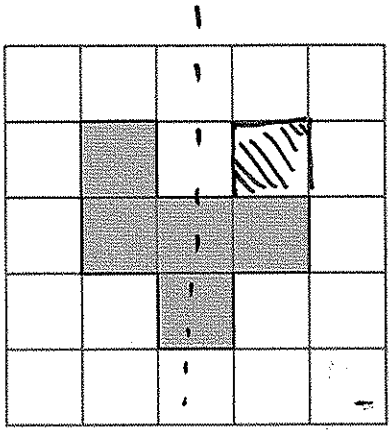
40 p
(2)

(Total 7 marks)

Q9

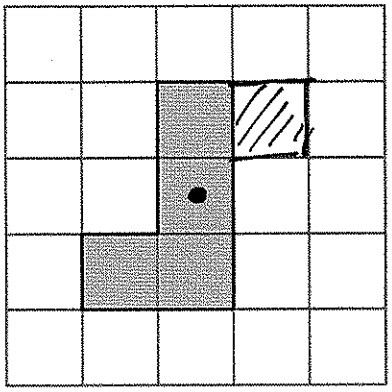
Leave blank

10. (a) On the diagram below, shade **one** square so that the shape has exactly **one** line of symmetry.



(1)

(b) On the diagram below, shade **one** square so that the shape has rotational symmetry of order 2



(1)

(Total 2 marks)

Q10

11. Ben is n years old.

Colin is three years younger than Ben.

(a) Write down an expression, in terms of n, for Colin's age.

$n-3$

.....

(1)

Daniel is twice as old as Ben.

(b) Write down an expression, in terms of n, for Daniel's age.

$2n$

.....

$2n$ or $n \times 2$ or $2 \times n$

(1)

(Total 2 marks)

Q11

Leave blank

12. Here is a rectangle.

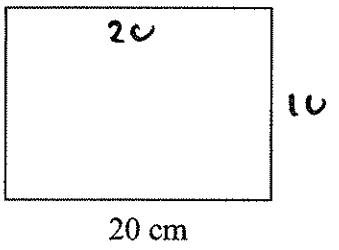


Diagram **NOT** accurately drawn

(a) Work out the perimeter of the rectangle.

10 + 20 + 10 + 20

60 ..... cm

(2)

(b) Work out the area of the rectangle.

10 × 20

200 ..... cm^2

(2)

Q12

(Total 4 marks)

13. (a) Work out $2 \times (11 + 9)$

2 × 20

40 .....

(1)

(b) Work out $3 \times 5 + 4$

3 × 5 = 15 15 + 4 = 19

19 .....

(1)

(c) Work out $20 - 5 \times 3$

20 − (5 × 3)

20 − 15

5 .....

(1)

Q13

(Total 3 marks)

BODMAS Brackets first
then division / multiplication (in order)
Addition / Subtraction

Leave blank

14. $p = 5$
$r = 2$

(a) Work out the value of $4p + 3r$

$4p = 4 \times p = 4 \times 5 = 15$ $\quad 15 + 6$
$3r = 3 \times r = 3 \times 2 = 6$

21

(2)

n is an even number.

(b) What type of number is $n + 1$?

odd

(1) **Q14**

(Total 3 marks)

15.

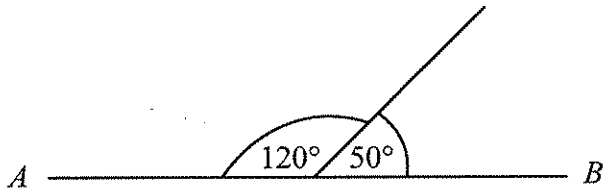


Diagram **NOT** accurately drawn

AB is a straight line.

(a) This diagram is wrong.
Explain why.

angles on a straight line = 180

(1)

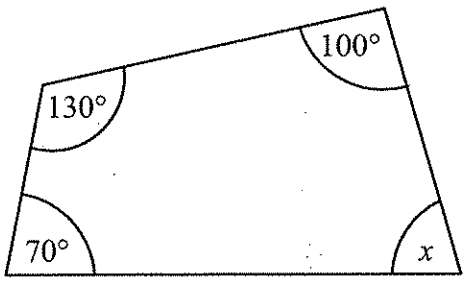


Diagram **NOT** accurately drawn

(b) Work out the size of the angle marked x.

$130 + 100 + 70 + x = 360$
$300 + x = 360$
$x = 60$

60 °

(2) **Q15**

(Total 3 marks)

Leave blank

16. The table shows some information about the medals won by each of 6 countries at the 2004 Olympic Games.

	Medals			
Country	**Gold**	**Silver**	**Bronze**	**Total**
United States	35	39	29	103
Russia	27	27	38	92
Australia	17	16	16	49
Germany	14	16	18	48
Italy	10	11	11	32
Great Britain	9	9	12	30

(a) Complete the table for Russia and Australia.

(2)

(b) How many bronze medals did Russia win?

38

(1)

(c) Which country won 10 gold medals?

Italy

(1)

Great Britain won a total of 30 medals.

(d) Work out the fraction of these medals which were silver.
Give your fraction in its simplest form.

$\frac{9}{30} = \frac{3}{10}$

$\frac{3}{10}$

(2)

48

(e) Find the ratio of the total number of medals won by Germany to the total number of medals won by Italy. 32
Give your ratio in its simplest form.

48 : 32
24 : 16
12 : 8
6 : 4
3 : 2

3 : 2

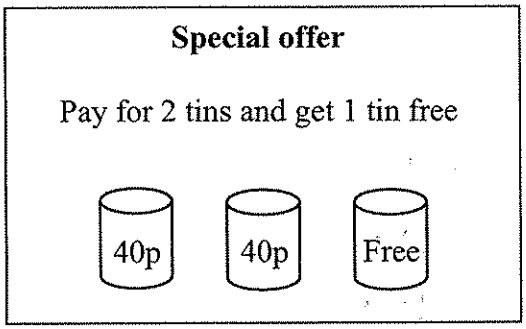
(2)

(Total 8 marks)

Q16

Leave blank

17. A tin of cat food costs 40p.
A shop has a special offer on the cat food.



Julie wants 12 tins of cat food.

(a) Work out how much she pays.

needs to buy 8 tins (will get another half free = 4 free

8 × 40p = £3.20

£ 3.20

(3)

9 of the 12 tins are tuna.

(b) Write 9 out of 12 as a percentage.

$\frac{9}{12} = \frac{3}{4} =$

75 %

(2)

The normal price of a cat basket is £20
In a sale, the price of the cat basket is reduced by 15%.

(c) Work out the sale price of the cat basket.

10% of 20 = 2
5% of 20 = 1
15% = 3
20 − 3 = 17

£ 17

(3)

Q17

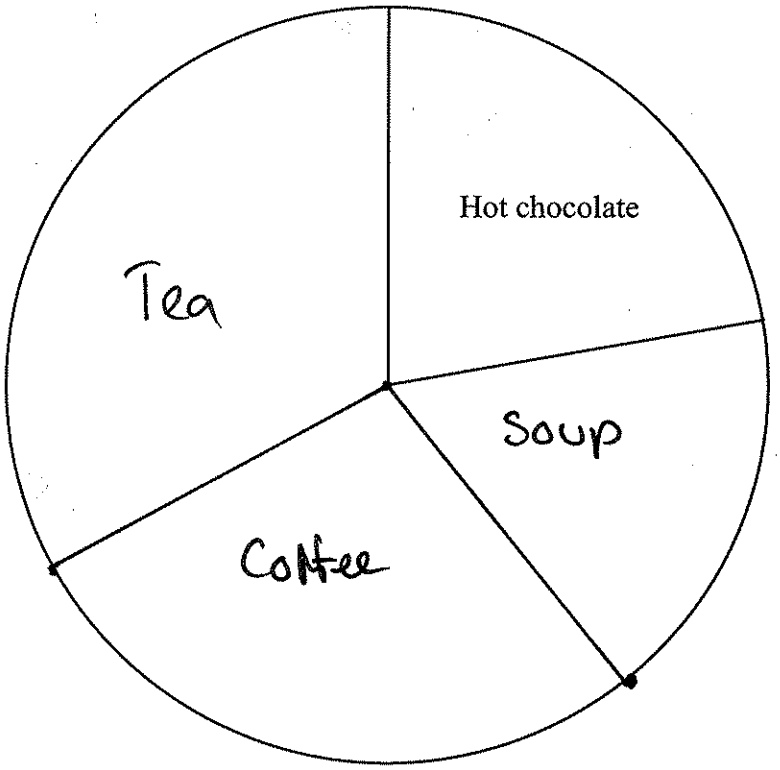
(Total 8 marks)

Leave blank

18. The table gives information about the drinks sold in a café one day.

Drink	Frequency	Size of angle
Hot chocolate	20	80°
Soup	15	60
Coffee	25	100
Tea	30	120
	90	360

Complete the pie chart to show this information.



for angles

Q18

(Total 3 marks)

divide 360 by total freq

360 ÷ 90 = 4

Each freq worth 4

Leave blank

19. (a) Simplify $5bc + 2bc - 4bc$

$5bc + 2bc = 7bc$

$7bc - 4bc = 3bc$

$3bc$

(1)

(b) Simplify $4x + 3y - 2x + 2y$

$4x - 2x = 2x$

$3y + 2y = 5y$

$2x + 5y$

(2)

(c) Simplify $m \times m \times m$

m^3

(1)

(d) Simplify $3n \times 2p$ $6np$

$6np$

(1)

(e) Factorise $5m + 10$

$5(m+2)$

$5(m+2$

(1)

Q19

(Total 6 marks)

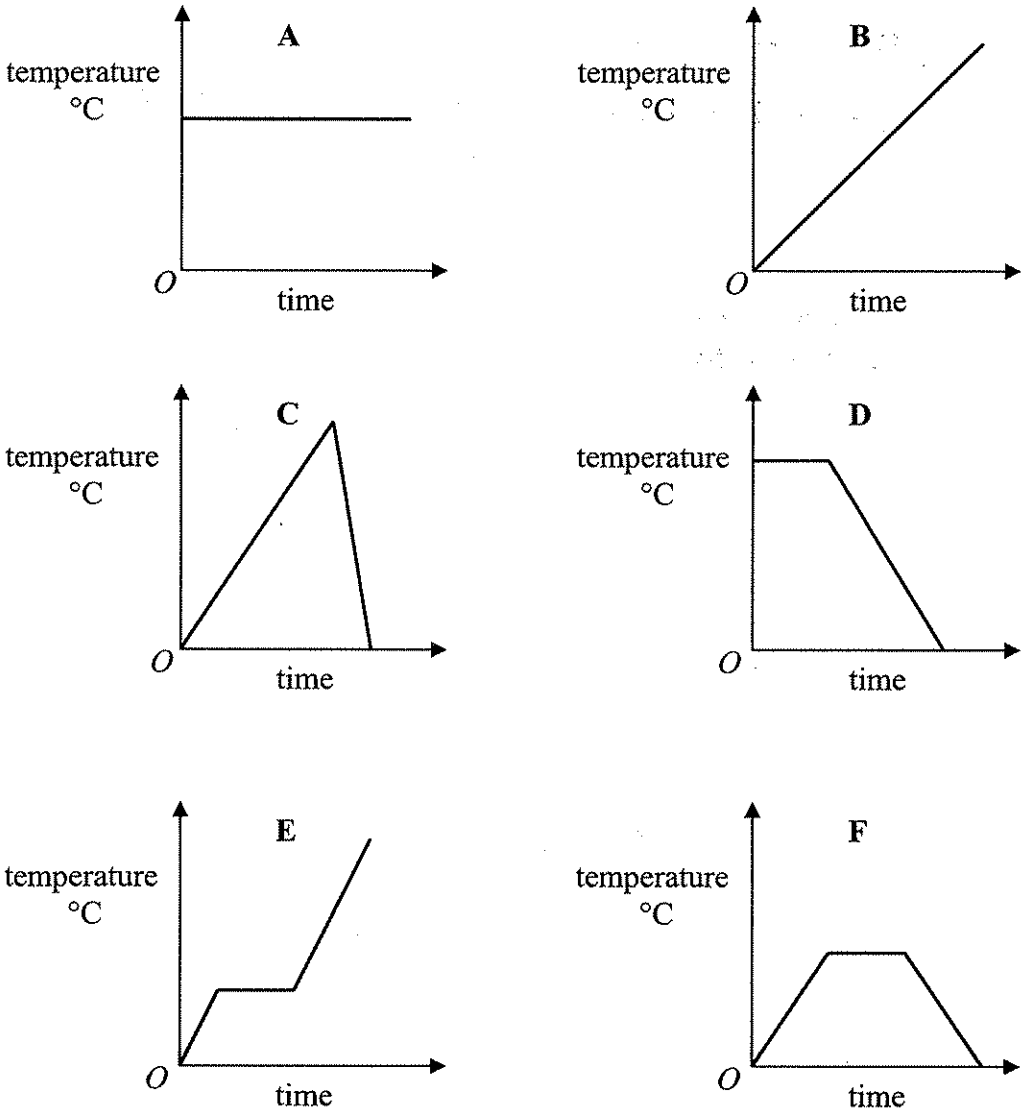
$5 \times m + 5 \times 2$

$5 \times (m+2)$

$5(m+2)$

Leave blank

20. Here are six temperature/time graphs.



Each sentence in the table describes one of the graphs.
Write the letter of the correct graph next to each sentence.

The first one has been done for you.

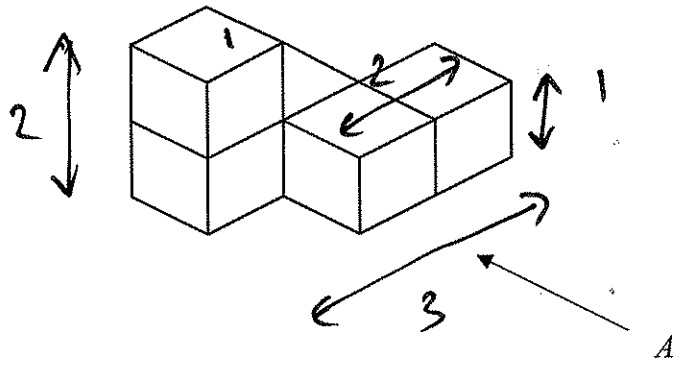
The temperature starts at 0°C and keeps rising.	**B**
The temperature stays the same for a time and then falls.	D
The temperature rises and then falls quickly.	C
The temperature is always the same.	A
The temperature rises, stays the same for a time and then falls.	F
The temperature rises, stays the same for a time and then rises again.	E

Q20

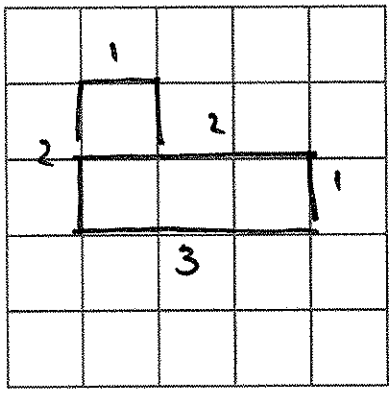
(Total 3 marks)

Leave blank

21. The diagram represents a solid made from 5 identical cubes.



On the grid below, draw the view of the solid from direction *A*.



numbers not needed

guide only

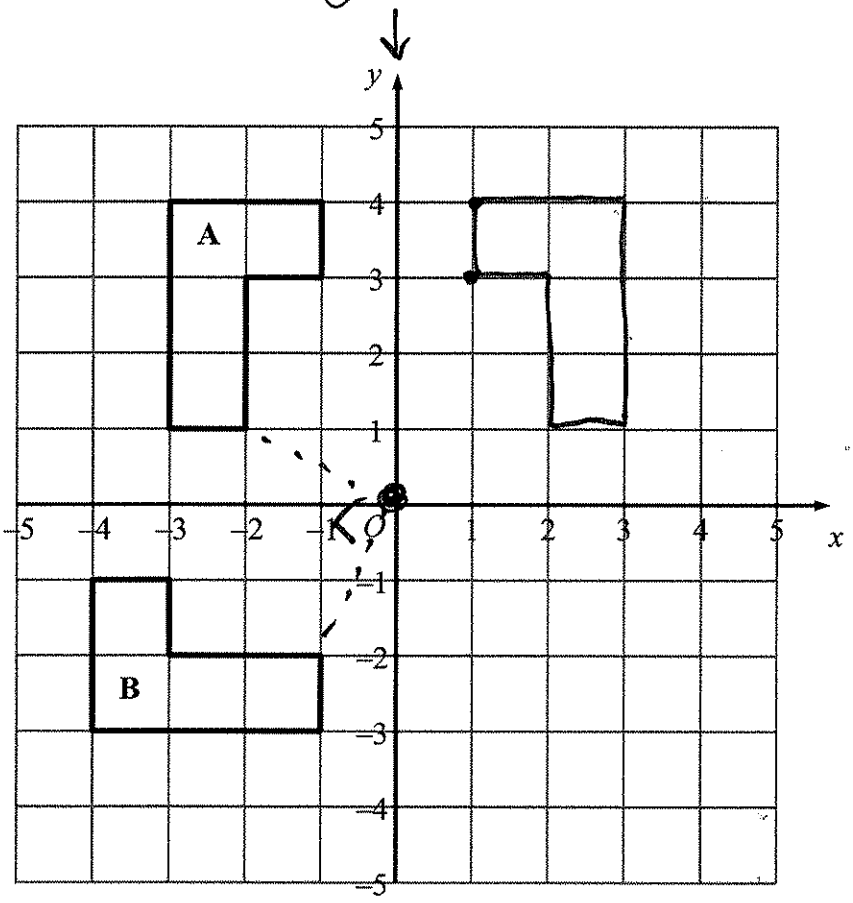
(Total 2 marks)

Q21

y axis

Leave blank

22.



(a) Reflect shape **A** in the *y* axis.

(2)

(b) Describe fully the **single** transformation which takes shape **A** to shape **B**.

rotation acw 90° about centre (0,0)

(3)

(Total 5 marks)

Q22

23. Sidra and Gemma share £48 in the ratio 5 : 3

Work out how much more money Sidra gets than Gemma gets.

5+3 = 8

48 ÷ 8 = 6 1 part = 6

5 × 6 = 30 5 parts

3 × 6 = 18 3 parts

30 − 18 diff

£ 12

(Total 3 marks)

Q23

Leave blank

24. Naomi wants to find out how often adults go to the cinema.

She uses this question on a questionnaire.

"How many times do you go to the cinema?"

☐ Not very often ☐ Sometimes ☐ A lot

(a) Write down **two** things wrong with this question.

1 does not say in a week monthy (no time period given)

2 needs frequencies ie 0-2 3-4 5+ descriptors meaningless

(2)

(b) Design a better question for her questionnaire to find out how often adults go to the cinema.
You should include some response boxes.

how many times do you go to the cinemema in 1 month please tick

never ☐
0-2 ☐
3-5 ☐
6 or more ☐

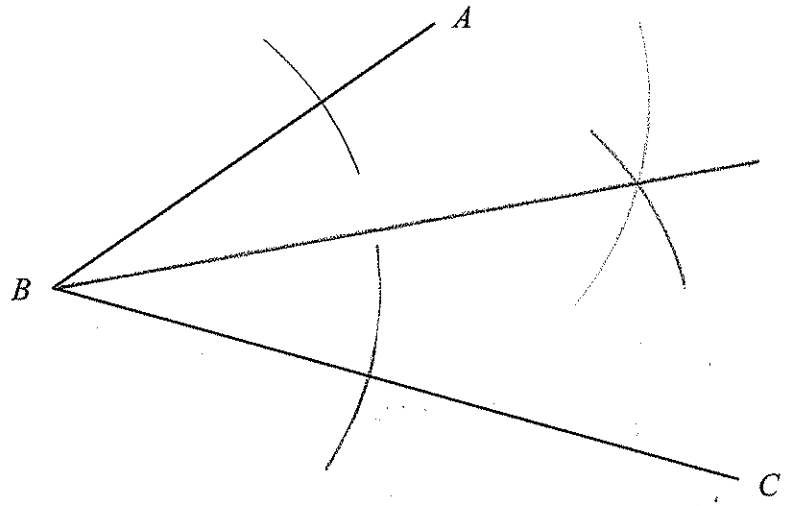
(2)

(Total 4 marks)

Q24

Leave blank

25. Use ruler and compasses to construct the bisector of angle *ABC*.
You must show all your construction lines.



Q25

(Total 2 marks)

Leave blank

26.

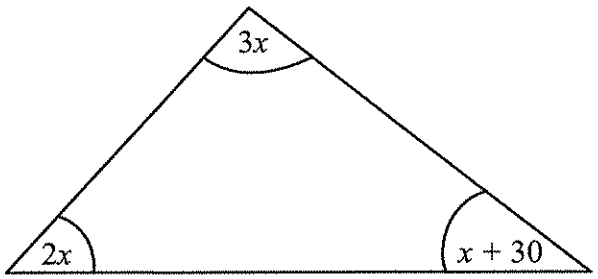


Diagram **NOT** accurately drawn

The diagram shows a triangle.
The sizes of the angles, in degrees, are

$3x$
$2x$
$x + 30$

Work out the value of x.

angles add up to 180

$3x + 2x + x + 30 = 180$

$6x + 30 = 180$

$6x = 150$

$x = \frac{150}{6} = 25$

$x =$ 25

(Total 3 marks)

Q26

TOTAL FOR PAPER: 100 MARKS

$6\overline{)150}$ = 25

END

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