Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						1	3	8	0	/	1	F	Signature	

Paper Reference(s)

1380/1F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics (Linear) – 1380

Paper 1 (Non-Calculator)

Foundation Tier

Tuesday 9 November 2010 – 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 31 questions in this question paper. The total mark for this paper is 100.
There are 28 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

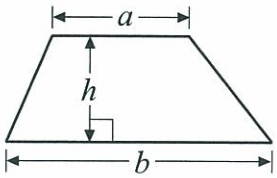
Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

GCSE Mathematics (Linear) 1380

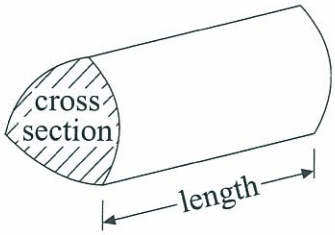
Formulae: Foundation Tier

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

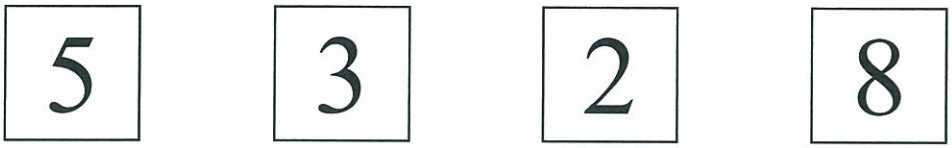
Answer ALL THIRTY ONE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. Lisa has 4 cards.
Each card has a number on it.



Lisa makes a number using all **four** cards.

(a) Write down the smallest number Lisa can make.

2 3 5 8

.....

(1)

(b) Write down the largest number Lisa can make.

8 5 3 2

.....

(1)

(c) Write down an odd number Lisa can make.

2 8 3 5

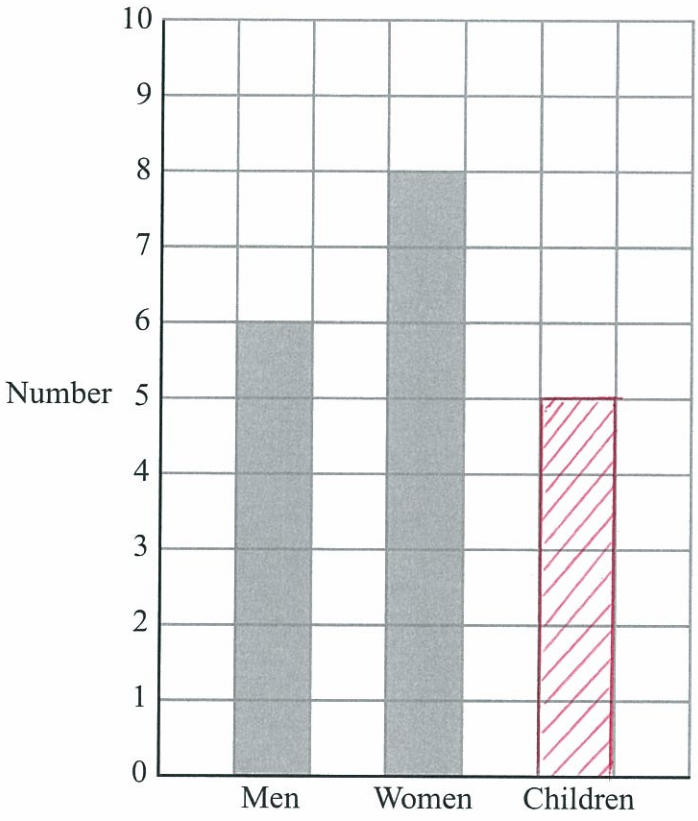
.....

(1) **Q1**

(Total 3 marks)

Leave blank

2. The bar chart shows the numbers of men and women on a boat trip.



There were 5 children on the boat trip.

(a) Complete the bar chart.

(1)

(b) Work out the total number of men, women and children on the boat trip.

19

.....

(2)

Q2

(Total 3 marks)

Leave blank

3. (a) Write the number 4906 in words.

Four thousand, nine hundred and six.

(1)

(b) Write the number **ten thousand five hundred and forty eight** in figures.

10,548

(1)

(c) Write the number 463 to the nearest ten.

460

(1)

(d) Write the number 29 760 to the nearest thousand.

30,000

(1)

Q3

(Total 4 marks)

Leave blank

4. The table shows some information about five students.

Name	Gender	Age	Number of brothers	Number of sisters
Angus	Male	15	2	2
Ben	Male	16	2	0
Clare	Female	16	0	1
Jane	Female	15	2	2
Pavel	Male	16	1	3

(a) How many sisters does Clare have?

1

.....

(1)

One male student has 2 brothers and 2 sisters.

(b) Write down the name of this student.

Angus

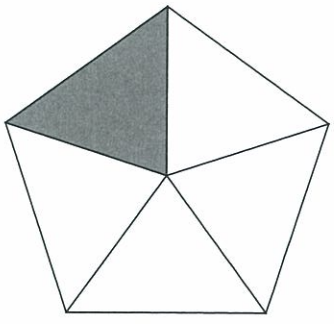
.....

(1)

Q4

(Total 2 marks)

5. (a) Here is a regular pentagon.



What fraction of the pentagon is shaded?

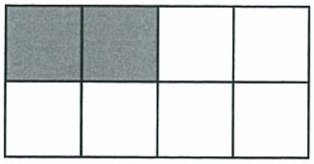
$\frac{1}{5}$

.....

(1)

Leave blank

(b) Here is a shape.



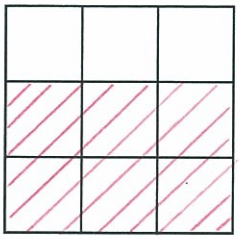
What percentage of the shape is **not** shaded?

$\frac{6}{8} \times 100 = \frac{3}{4} \times 100 = 75$

75 ..... %

(1)

(c) Here is a different shape.



Shade $\frac{2}{3}$ of this shape.

$\frac{2}{3}$ of $9 = \frac{9}{3} \times 2 = 3 \times 2 = 6$

(1)

(d) Here are some fractions.

$\frac{4}{6}$ $\frac{6}{10}$ $\frac{20}{30}$ $\frac{8}{12}$ $\frac{66}{100}$

Which two of these fractions are **not** equivalent to $\frac{2}{3}$?

$\frac{6}{10} = \frac{3}{5}$

$\frac{66}{100} = \frac{33}{50}$

$\frac{6}{10}$ ..... and $\frac{66}{100}$ .....

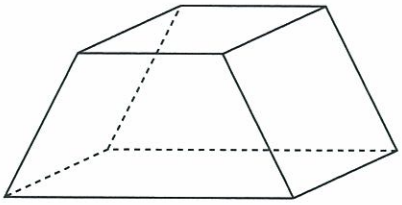
(2)

Q5

(Total 5 marks)

Leave blank

6. Here is a diagram of a prism.



Write down the number of

(i) faces

6
.....

(ii) edges

12
.....

(iii) vertices

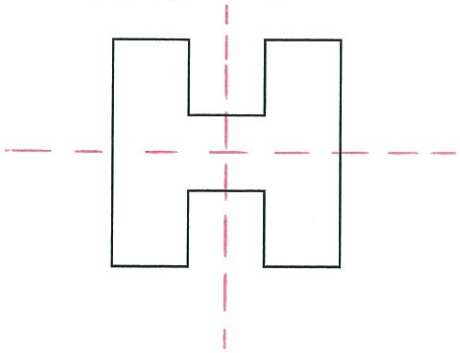
8
.....

Q6

(Total 3 marks)

Leave blank

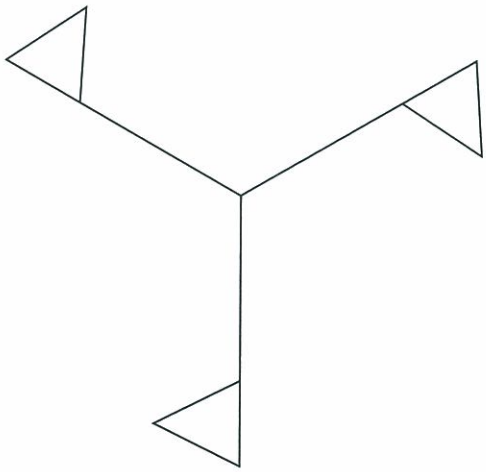
7. (a) On the shape, draw all the lines of symmetry.



(2)

The shape below has rotational symmetry.

(b) Write down the order of rotational symmetry.



3

(1)

Q7

(Total 3 marks)

Leave blank

8. Here is part of a timetable for a bus.

Blunsdon	07 18	07 45	08 33
Cricklade	07 26	07 53	08 41
Latton	07 31	07 58	08 46
South Cerney	07 38	08 05	08 53
Siddington	07 47	08 14	09 02
Seven Springs	08 26	08 51	09 39
Cheltenham	08 50	09 12	10 00

A bus leaves Blunsdon at 07 45

(a) At what time should the bus arrive at Siddington?

08:14
.....

(1)

Peter arrives at the Latton bus stop at 08 35
He waits for the next bus to Seven Springs.

(b) (i) How many minutes should he wait?

11
..... minutes

(ii) At what time should Peter arrive at Seven Springs?

09:39
.....

(2)

Marie gets the bus from Cricklade at 07 26

(c) How many minutes should this bus take to travel from Cricklade to Cheltenham?

1 hr and 24 minutes = 84 minutes

84
..... minutes

(2)

Q8

(Total 5 marks)

Leave blank

9. (a) Work out $4 \times 3 + 2$

$(4 \times 3) + 2 = 12 + 2 = 14$

14

(1)

(b) Work out $20 - 12 \div 4$

$20 - (12 \div 4) = 20 - 3 = 17$

17

(1)

(c) Work out $(18 \div 3) + (20 \div 5)$

$6 + 4 = 10$

10

(1)

(d) Work out $(3 + 5)^2$

$8^2 = 64$

64

(1) **Q9**

(Total 4 marks)

Leave blank

10. (a) Here is a list of numbers.

3	5	7	8	9	10	12

From the list of numbers, write down

(i) a multiple of 6

12

(ii) a factor of 14

7

(iii) a square root of 25

5

(3)

(b) Scott says

'If you add two different square numbers, you will always get an even number.'

Show that Scott is **wrong**.

$2^2 + 3^2 = 4 + 9 = 13$, which is odd.

∴ Scott is wrong.

(2) **Q10**

(Total 5 marks)

Leave blank

11. $d = 6$

(a) (i) Work out the value of $3 + d$

$3 + 6 = 9$

9

(ii) Work out the value of $2d$

$2(6) = 12$

12

(2)

$h = 3f + 4g$

$f = 2$
$g = -1$

(b) Work out the value of h

$h = 3(2) + 4(-1)$
$= 6 - 4 = 2$

$h =$ 2

(2)

Q11

(Total 4 marks)

12. Write down a sensible **metric** unit for each measurement.

(i) The weight of a pair of sunglasses.

grams

(ii) The height of a house.

metres

(iii) The volume of toothpaste in a tube of toothpaste.

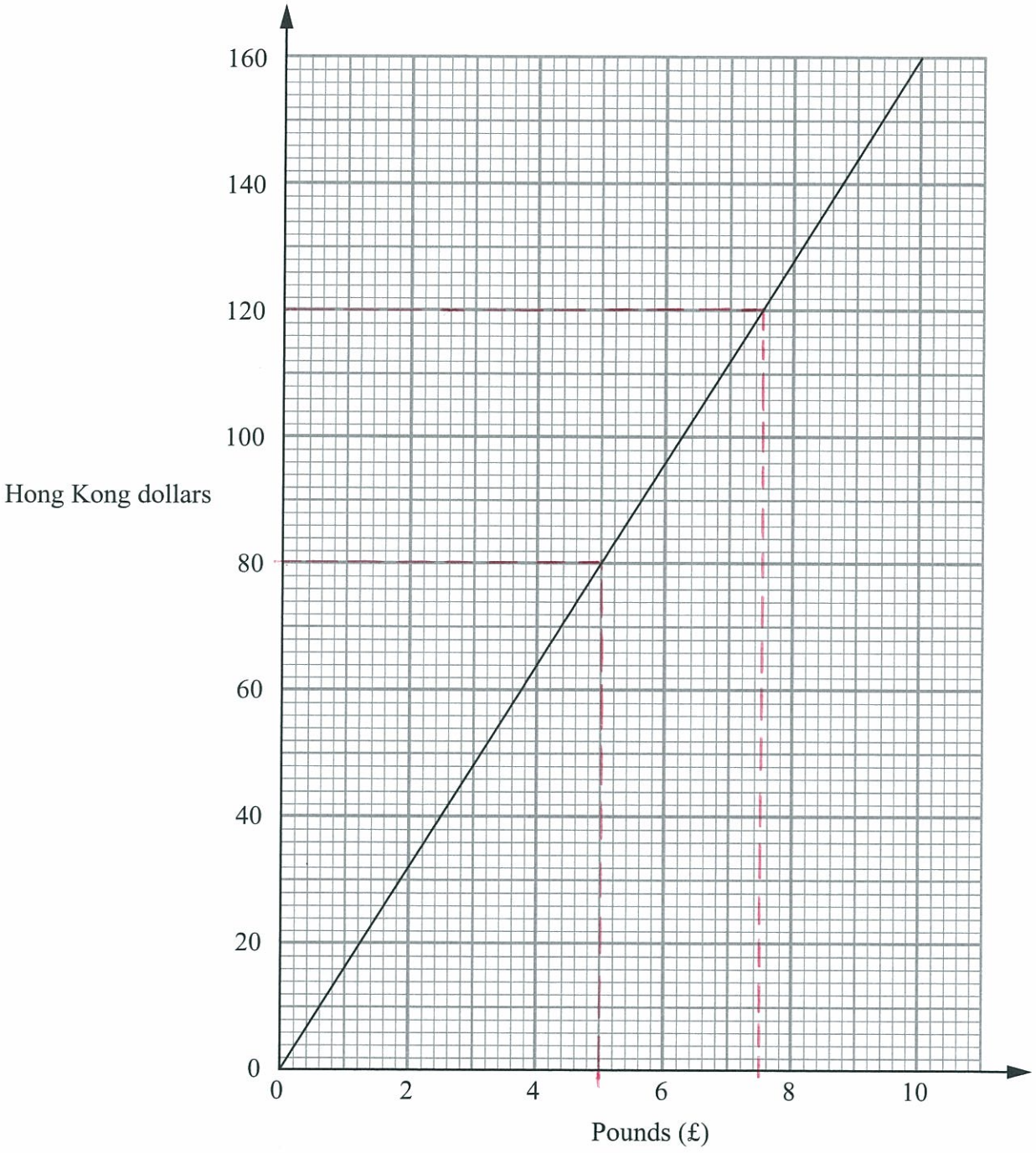
millilitres

Q12

(Total 3 marks)

Leave blank

13. This graph can be used to change between pounds (£) and Hong Kong dollars.



(a) Use the graph to change £5 to Hong Kong dollars.

80 Hong Kong dollars

(1)

(b) Use the graph to change 120 Hong Kong dollars to pounds.

£ 7.50

(1) **Q13**

(Total 2 marks)

Leave blank

14. Jasmine is n years old.

Alfie is twice as old as Jasmine.

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

$2n$

.....

(1)

Nimer is 3 years older than Jasmine.

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

$n + 3$

.....

(1)

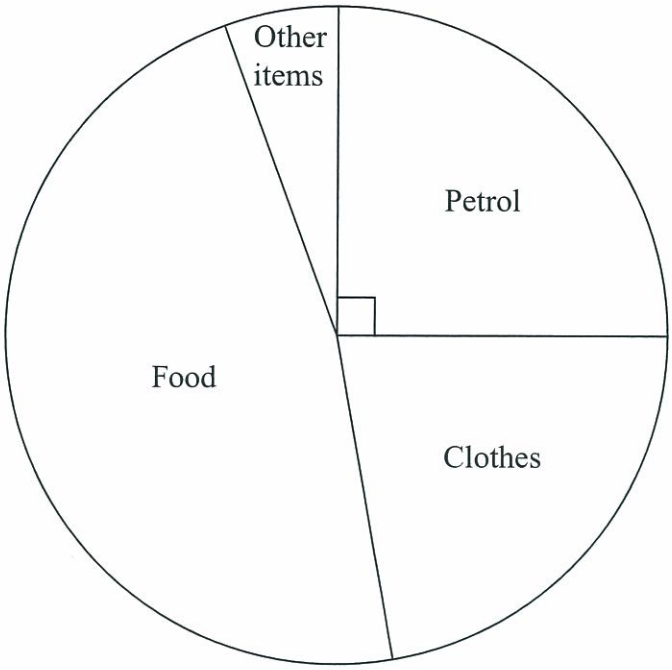
Q14

(Total 2 marks)

Leave blank

15. Mrs Yusuf went shopping at a superstore.

The pie chart shows information about the money she spent on petrol, on clothes, on food and on other items.



(a) What did she spend most money on?

Food

.....

(1)

(b) What fraction of the money she spent was on petrol?

$\frac{90}{360} = \frac{1}{4}$

$\frac{1}{4}$

.....

(1)

Mrs Yusuf spent £25 on petrol at the superstore.

(c) In total, how much money did she spend?

Let x = total amount spent by Mrs Yusuf.

Then $\frac{1}{4}$ of $x = 25$

$\Rightarrow \frac{1}{4} \times x = \frac{x}{4} = 25$.

$\Rightarrow x = 25 \times 4 = £100$

£ 100

.....

(2)

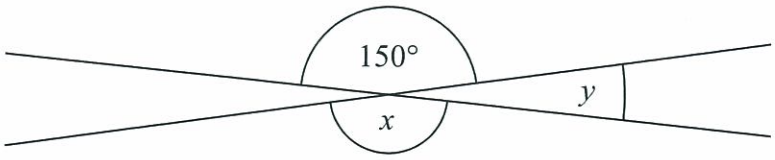
Q15

(Total 4 marks)

Leave blank

16.

Diagram **NOT** accurately drawn



Fiona says "angle x is 150°"

Fiona is correct.

(a) Give a reason why.

Vertically opposite angles are equal.

(1)

Neelan says "angle y is 40°"

Neelan is wrong.

(b) Explain why.

$y = (360 - 2(150))/2 = \frac{360 - 300}{2}$

$= \frac{60}{2} = 30°$. Angles round a point must add to 360°

(1) **Q16**

(Total 2 marks)

Leave blank

17. A fair 6-sided dice has coloured faces.

3 faces are red.
2 faces are blue.
1 face is green.

Katie rolls the dice once.

(a) Write down the colour she is **least** likely to get.

green
.....

(1)

(b) Write down the probability that she gets blue.

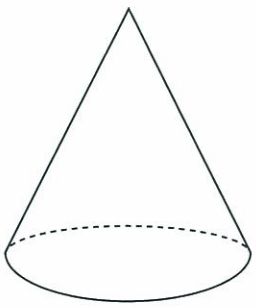
$P(\text{Blue}) = \frac{n(\text{Blue})}{n(S)} = \frac{2}{6} = \frac{1}{3}$

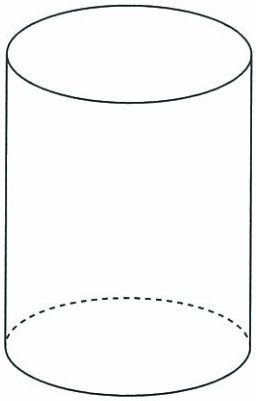
$\frac{1}{3}$
.....

(1) **Q17**

(Total 2 marks)

18. Write down the mathematical name of each of these solid shapes.





(i) Cone .....

(ii) Cylinder **Q18**

(Total 2 marks)

Leave blank

19. Work out an estimate for the value of 27×52.9

$30 \times 50 = 1,500$

1,500

Q19

(Total 2 marks)

20. There are 540 workers in a factory.

240 of the workers are female.

15% of **male** workers are more than 50 years of age.

Work out the number of male workers that are more than 50 years of age.

No. of male workers $= 540 - 240 = 300$

15% of 300

$= \frac{15}{100} \times 300 = \frac{3}{20} \times 300 = \frac{300}{20} \times 3 = \frac{30}{2} \times 3$

$= 15 \times 3 = 45$

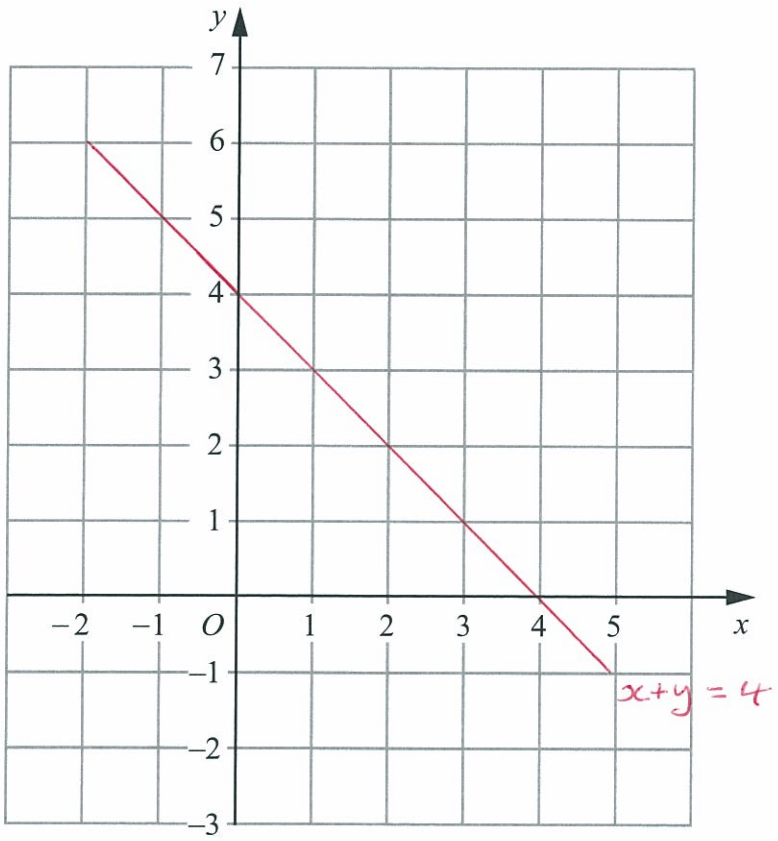
45

Q20

(Total 3 marks)

Leave blank

21. On the grid draw the graph of $x + y = 4$ for values of x from -2 to 5



$x + y = 4$

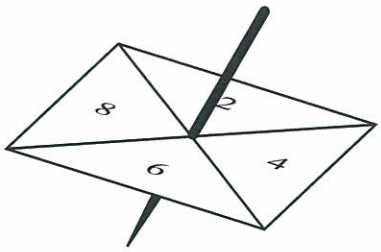
$\Rightarrow y = -x + 4$, i.e. a straight line with gradient of -1 and y-intercept of 4.

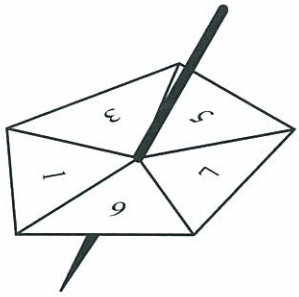
Q21

(Total 3 marks)

Leave blank

22. Louise spins a four-sided spinner and a five-sided spinner.





The four-sided spinner is labelled 2, 4, 6, 8
The five-sided spinner is labelled 1, 3, 5, 7, 9

Louise adds the score on the four-sided spinner to the score on the five-sided spinner.
She records the possible total scores in a table.

4-sided spinner

5-sided spinner	+	2	4	6	8
	1	3	5	7	9
	3	5	7	9	11
	5	7	9	11	13
	7	9	11	13	15
	9	11	13	15	17

(a) Complete the table of possible total scores.

(1)

(b) Write down all the ways in which Louise can get a total score of 11
One way has been done for you.

(2, 9) (7, 4) (5, 6) (3, 8) .....

(2)

Both spinners are fair.

(c) Find the probability that Louise's total score is less than 6

$P(<6) = \frac{n(<6)}{n(S)} = \frac{3}{20}$

$\frac{3}{20}$

.....

(2)

Q22

(Total 5 marks)

Leave blank

23. (a) Work out the value of

(i) the square of 6

$6^2 = 36$

36

(ii) 2^4

$2 \times 2 \times 2 \times 2 = 16$

16

(2)

(b) Work out the value of

(i) $-10 \div 5$

-2

-2

(ii) -3×-4

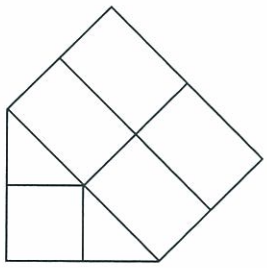
12

(2)

(Total 4 marks)

Q23

24. Here is a prism.
It is made by cutting a solid cube of side 2 cm in half.



Find the volume of the prism.
State the units with your answer.

$\frac{\text{Volume of whole cube}}{2} = \frac{2 \times 2 \times 2}{2} = \frac{8}{2} = 4\text{cm}^3$

OR

Volume of prism = Cross-sectional surface area x length

$= \frac{2 \times 2}{2} \times 2 = 2 \times 2 = 4\text{cm}^3$

4 cm^3

(Total 3 marks)

Q24

Leave blank

25. Chris plays golf.

Here are 15 of his scores.

69	78	82	86	77
83	91	77	92	80
74	81	83	77	72

(a) Draw an ordered stem and leaf diagram to show this information.

You must include a key.

6	9
7	2 4 7 7 7 8
8	0 1 2 3 3 6
9	1 2

Key: 6 | 9 = 69

(3)

(b) Write down the mode.

77

.....

(1)

(Total 4 marks)

Q25

Leave blank

26. Work out $\frac{17}{20} - \frac{2}{5}$

$= \frac{(1 \times 17) - 4(2)}{20} = \frac{17 - 8}{20} = \frac{9}{20}$

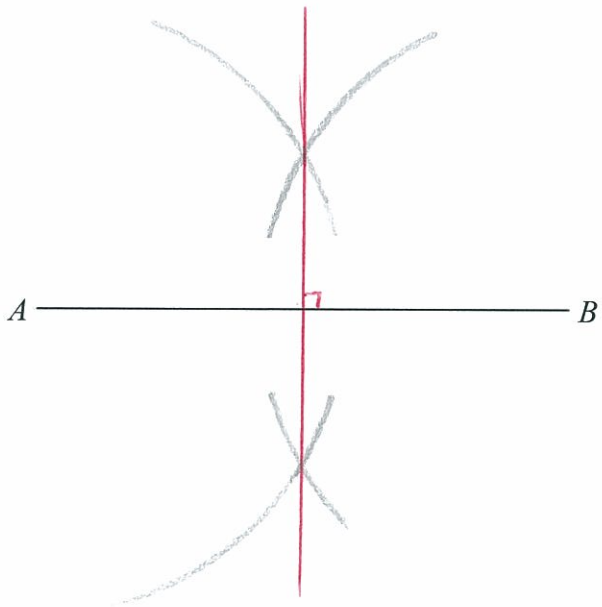
$\frac{9}{20}$

..... **Q26**

(Total 2 marks)

27. Use ruler and compasses to **construct** the perpendicular bisector of the line AB.

You must show all your construction lines.



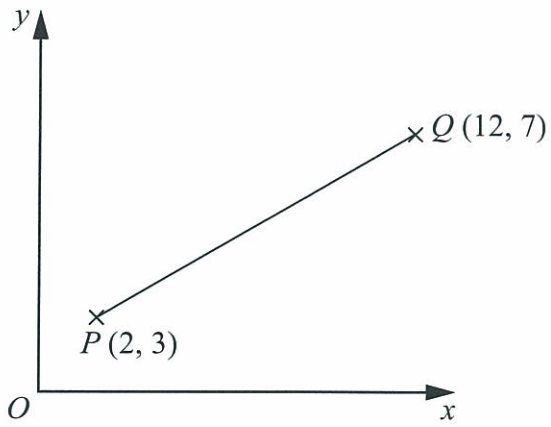
Q27

(Total 2 marks)

Leave blank

28.

Diagram **NOT** accurately drawn



P is the point with coordinates (2, 3).
Q is the point with coordinates (12, 7).

Work out the coordinates of the midpoint of the line PQ.

$\left(\frac{2+12}{2}, \frac{3+7}{2}\right) = (7, 5)$

(7, 5) **Q28**

(Total 2 marks)

Leave blank

29. (a) Expand and simplify $3(x + 5) + 2(5x - 6)$

$3x + 15 + 10x - 12$

$= 13x + 3$

$13x + 3$

(2)

(b) Factorise $5x + 10$

$5(x + 2)$

$5(x + 2)$

(1)

(c) Factorise $x^2 - 7x$

$x(x - 7)$

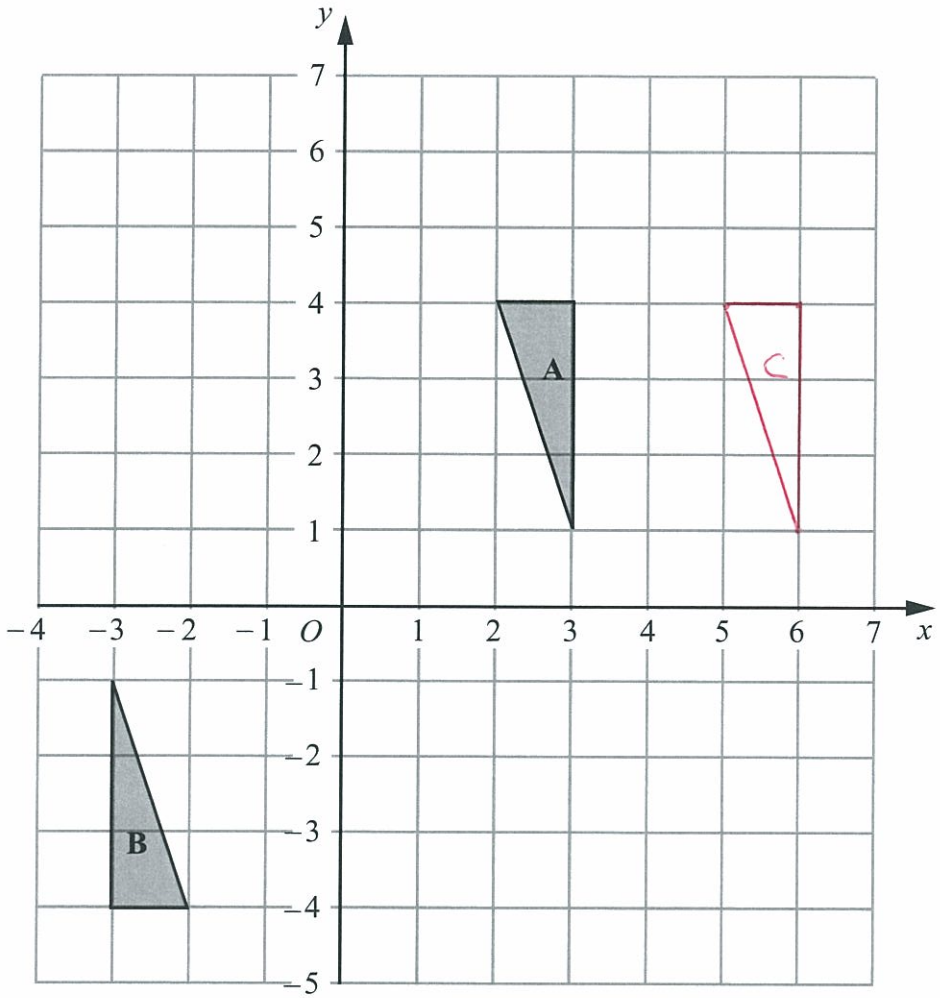
$x(x - 7)$

(1) **Q29**

(Total 4 marks)

Leave blank

30.



Triangle **A** and triangle **B** are drawn on the grid.

(a) Describe fully the single transformation which maps triangle **A** onto triangle **B**.

A rotation of 180° about the point (0, 0)

(3)

(b) Translate triangle **A** by the vector $\begin{pmatrix} 3 \\ 0 \end{pmatrix}$.

Label the new triangle **C**.

→ +3 units along the x-axis and 0 units along the y-axis.

(1)

Q30

(Total 4 marks)

Leave blank

31. Here are the first five terms of an arithmetic sequence.

2 6 10 14 18

(a) Find, in terms of n, an expression for the nth term of this sequence.

$n \longrightarrow$ 1 2 3 4 5

$f(n) \longrightarrow$ 2 6 10 14 18

1st order difference $\longrightarrow$ 4 4 4 4

$\Rightarrow f(n) = 4n - 2 \longrightarrow$ By inspection.

$4n - 2$

(2)

(b) An expression for the nth term of another sequence is $10 - n^2$

(i) Find the third term of this sequence.

When $n = 3$, $10 - n^2$ is given by

$10 - 3^2 = 10 - 9 = 1$

1

(ii) Find the fifth term of this sequence.

$10 - 5^2 = 10 - 25 = -15$

-15

(2) Q31

(Total 4 marks)

TOTAL FOR PAPER: 100 MARKS

END