Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						1	3	8	0	/	2	F	Signature	

Paper Reference(s)

1380/2F

Edexcel GCSE

Mathematics (Linear) – 1380

Paper 2 (Calculator)

Foundation Tier

Friday 11 June 2010 – Morning

Time: 1 hour 30 minutes

Examiner's use only

Team Leader's use only

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator.
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 27 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 may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

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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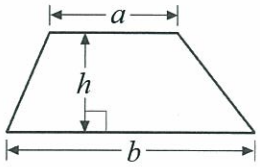
GCSE Mathematics (Linear) 1380

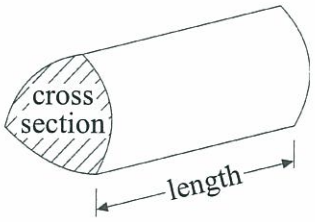
Formulae: Foundation Tier

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 TWENTY SEVEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Here is an incomplete pictogram.
It shows the numbers of hours of sunshine on Monday, Tuesday, Wednesday, Thursday and Saturday of one week.

Monday	○ ○ ◔
Tuesday	○ ○
Wednesday	○ ○ ○
Thursday	○
Friday	○ ○
Saturday	○ ○ ◔
Sunday	○ ◔

Key: ○ Represents 4 hours

(a) Write down the number of hours of sunshine on Wednesday.

12

(1)

(b) Write down the number of hours of sunshine on Monday.

10

(1)

On Friday, there were 8 hours of sunshine.

(c) Show this on the pictogram.

(1)

On Sunday, there were 6 hours of sunshine.

(d) Show this on the pictogram.

(1) **Q1**

(Total 4 marks)

Leave blank

2. (a) Write down **two pounds eighty pence** in figures.

£ 2.80

(1)

(b) Write down **two pounds and six pence** in figures.

£ 2.06

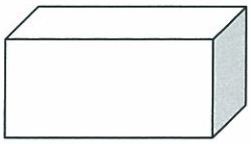
(1)

Q2

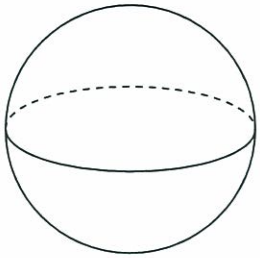
(Total 2 marks)

3. (a) Write down the mathematical name for each of these 3-D shapes.

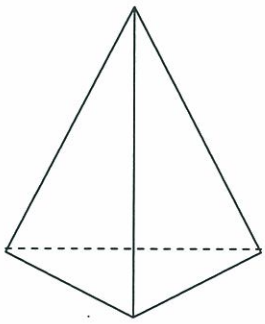
(i)



(ii)



(iii)



(i) Cuboid (ii) Sphere (iii) Tetrahedron

(3)

(b) Here is a solid prism made from centimetre cubes.

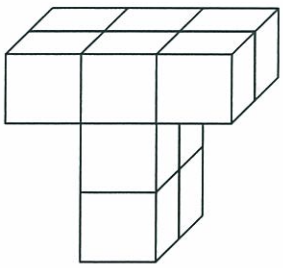
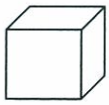


Diagram **NOT** accurately drawn



1 cm^3

Find the volume of the prism.

10 cm^3

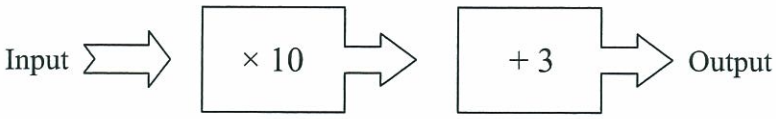
(1)

Q3

(Total 4 marks)

Leave blank

4. Here is a two-stage number machine.
It multiplies by 10 and then adds 3



Complete the table.

Input	Output
1	13
2	23
5	53
8	83
10	103

Q4

(Total 2 marks)

5.

Impossible	Unlikely	Even chance	Likely	Certain

From the words above, choose what best describes the probability

(a) that the sun will shine in July next year in London,

Likely

(1)

(b) that the next baby to be born will be a boy,

Even chance

(1)

(c) that there will be 50 days next month.

Impossible

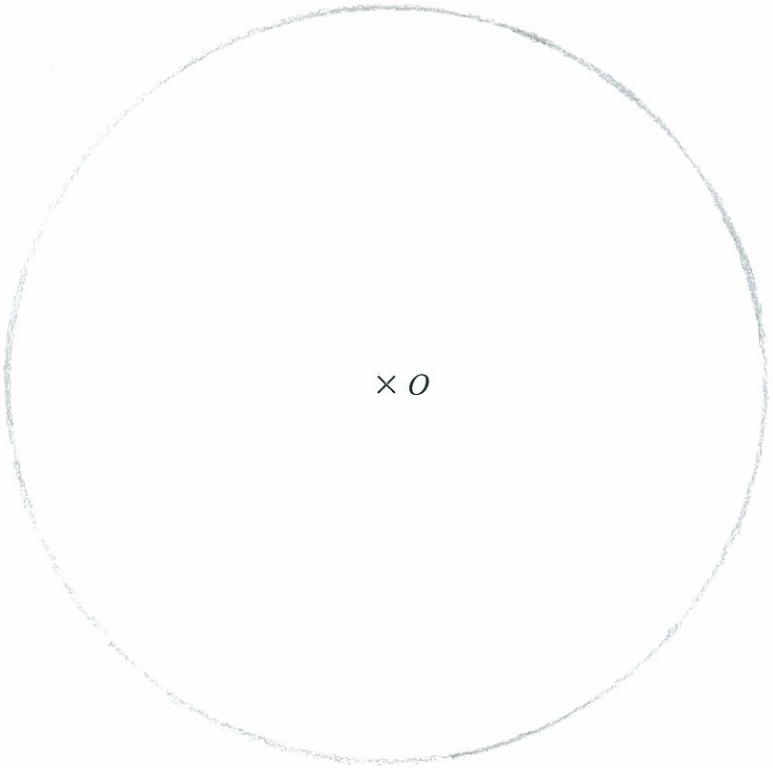
(1)

Q5

(Total 3 marks)

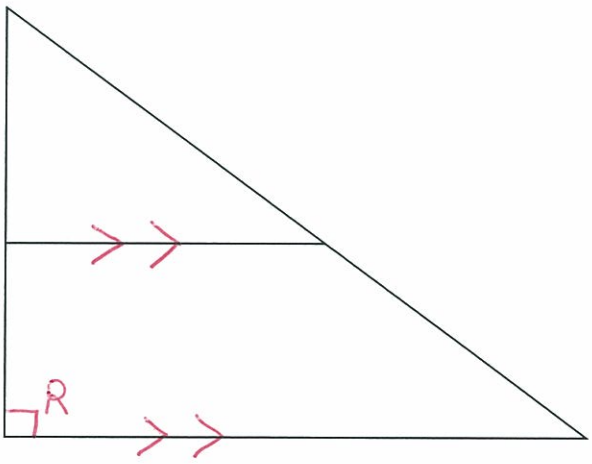
Leave blank

6. (a) Draw a circle of radius 5 cm.
Use the point O, marked with a (×), as the centre of your circle.



(1)

(b)



(i) On the diagram mark, with arrows (>>), a pair of parallel lines.

(1)

(ii) On the diagram mark, with a letter R, a right-angle.

(1) **Q6**

(Total 3 marks)

Leave blank

7. Complete this table by writing a sensible unit for each measurement.

	Metric	Imperial
The height of a door	metres	feet
The weight of a man	kilograms	pounds
The volume of water in a bucket	litres	gallons

Q7

(Total 3 marks)

8. (a) Work out 5^2

$5 \times 5 = 25$

25

(1)

(b) Find the square root of 3.24

$\sqrt{3.24} = 1.8$

1.8

(1)

Q8

(Total 2 marks)

9. Here are the first four terms of a number sequence.

7 10 13 16

(a) Write down the next term in this number sequence.

19

(1)

(b) Explain how you found your answer.

To obtain the next term in the sequence, add 3 to the preceding term.

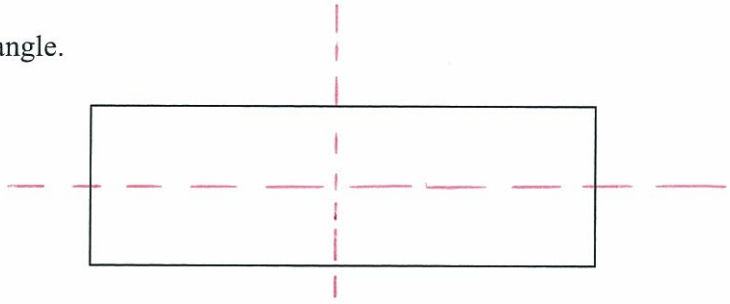
(1)

Q9

(Total 2 marks)

Leave blank

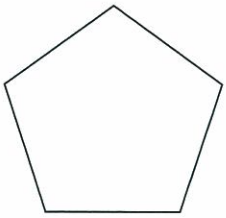
10. Here is a rectangle.



(a) Draw all the lines of symmetry of this rectangle.

(2)

Here is a regular pentagon.



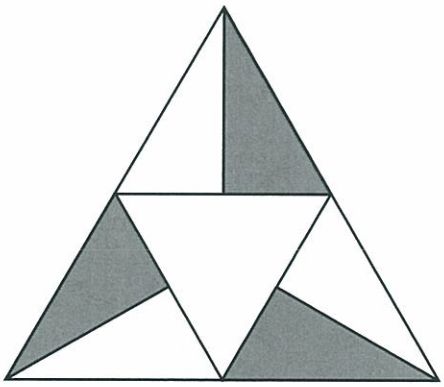
(b) Write down the order of rotational symmetry of this regular pentagon.

5

.....

(1)

Here is a shape.



(c) Write down the order of rotational symmetry of this shape.

3

.....

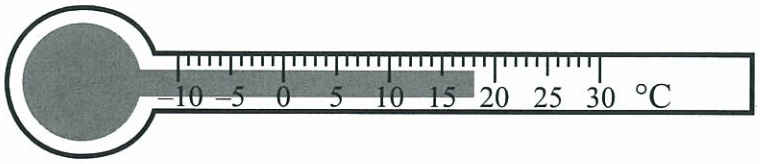
(1) **Q10**

(Total 4 marks)

Leave blank

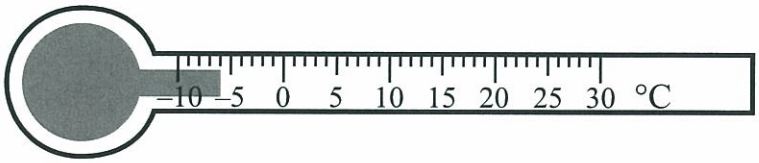
11. (a) Write down the temperature shown on each of these thermometers.

(i)



18 ..... °C

(ii)



−6 ..... °C

(2)

The table shows the temperatures, in London, at different times on New Years Day, 2008

Time of day	Temperature
6 am	−3°C
10 am	0°C
noon	2°C
2 pm	5°C
6 pm	4°C
10 pm	−1°C

(b) Write down the lowest temperature.

−3 ..... °C

(1)

(c) Work out the difference in temperature between 6 pm and 10 pm.

4 − (−1) = 4 + 1 = 5°c

5 ..... °C

(1)

Q11

(Total 4 marks)

Turn over

Leave blank

12.

(a) What fraction of the shape is shaded?

$\frac{5}{12}$

.....

(1)

(b) Here is a list of fractions.

$\frac{2}{10}$ $\frac{4}{20}$ $\frac{5}{20}$ $\frac{10}{50}$ $\frac{3}{10}$

Two of the fractions are **not** equivalent to $\frac{1}{5}$

Write down these two fractions.

$\frac{5}{20} = \frac{1}{4}$ and $\frac{3}{10}$ is already in its most simplified form

$\frac{5}{20}$ ..... and $\frac{3}{10}$ .....

(2)

(c) Work out $\frac{3}{4}$ of 64

$\frac{3}{4} \times 64 = \frac{64}{4} \times 3$

$= 16 \times 3 = 48$

48

.....

(2) **Q12**

(Total 5 marks)

Leave blank

13. Tulips cost 85p each.
Sara has £20 to spend on tulips.
She buys the greatest possible number of tulips.

(a) Work out the number of tulips Sara buys.

$\frac{20}{0.85} = 23.5$ (3 s.f.).

∴ 23 is the greatest possible no. of tulips she can buy.

23 ..... tulips
(2)

Sara pays with a £20 note.

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

$20 - (23 \times 0.85)$

$= 20 - 19.55 = £0.45$

or 45p

45 ..... p
(2) **Q13**

(Total 4 marks)

14. The two-way table gives information about the subjects studied by 50 students.

	Law	Engineering	Medicine	Total
Male	6	15	4	25
Female	5	6	14	25
Total	11	21	18	50

(a) Complete the two-way table.

(3)

One of these students is chosen at random.

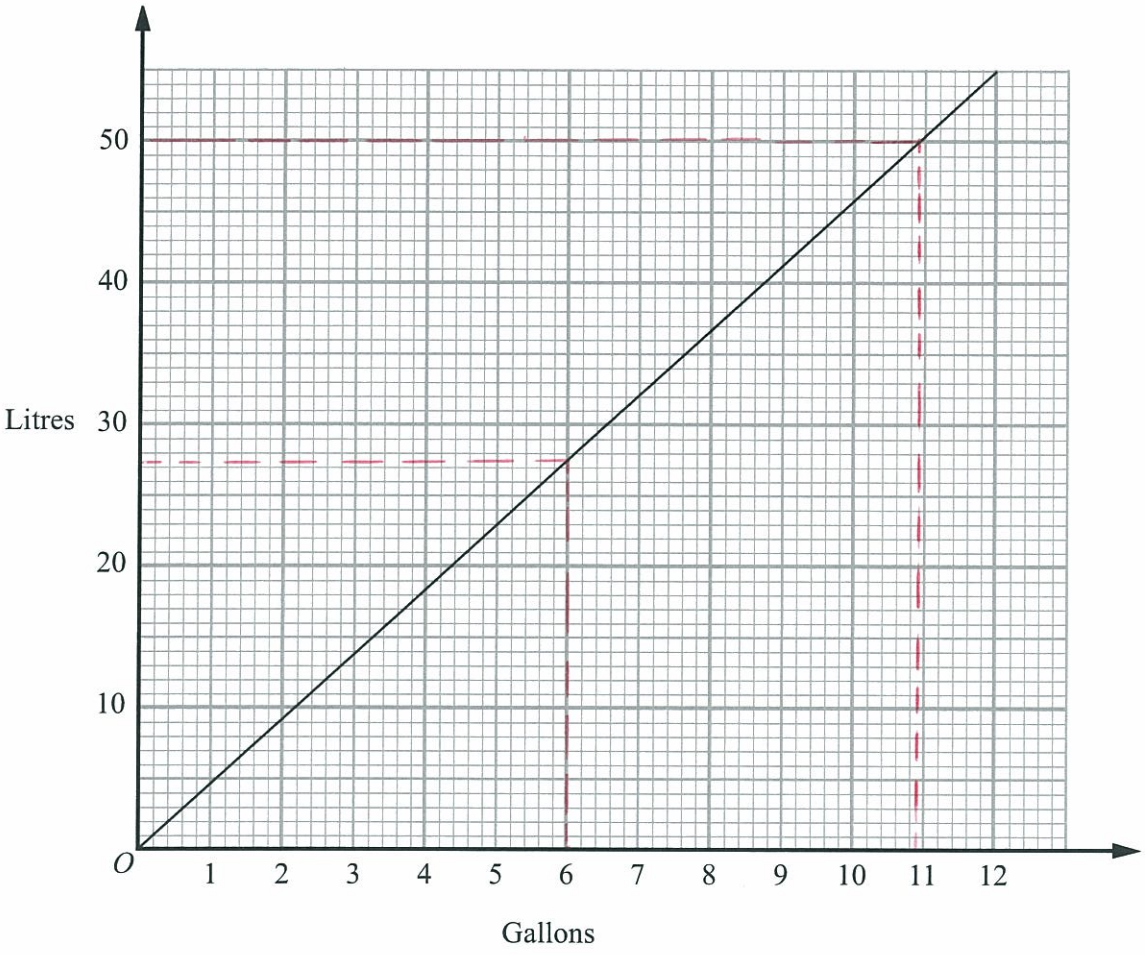
(b) Find the probability that this student is male and studies Law.

$\frac{6}{50} = \frac{3}{25}$ .....
(2) **Q14**

(Total 5 marks)

Leave blank

15. This conversion graph can be used to change between litres and gallons.



(a) Use the graph to change 50 litres to gallons.

10.9 ..... gallons

(1)

(b) Use the graph to change 6 gallons to litres.

27.5 ..... litres

(1)

1 litre of petrol costs £1.15

(c) Work out the cost of 50 litres of petrol.

50 x 1.15

£ 57.50 .....

(2)

(d) Work out an estimate for the cost of 1 gallon of petrol.

4.5 x 1.15 = 5.175
or £5 (to 1s.f.).

£ 5.00 .....

(2)

Q15

(Total 6 marks)

Leave blank

16. (a) Solve $\frac{x}{5} = 3$

$x = 3 \times 5 = 15$

$x =$ 15

(1)

(b) Solve $2y - 4 = 9$

$y = \frac{9+4}{2} = \frac{13}{2} = 6\frac{1}{2}$ or 6.5

$y =$ 6.5

(2) **Q16**

(Total 3 marks)

17.

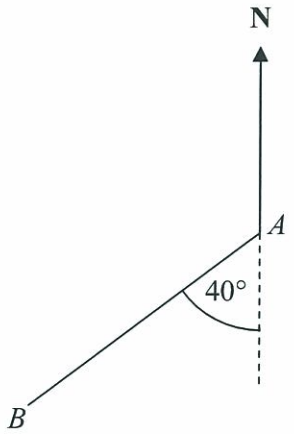


Diagram **NOT** accurately drawn

Work out the bearing of B from A.

$180 + 40 = 220°$

220 °

Q17

(Total 2 marks)

Leave blank

18. Here is part of a train timetable for six trains from Birmingham to London.

Train	A	B	C	D	E	F
Birmingham	06 35	07 00	07 15	07 30	07 45	08 00
London	08 09	08 39	08 48	09 04	09 59	09 39

(a) Which train takes more than 2 hours to go from Birmingham to London?

E
.....
(1)

(b) Work out the number of **minutes** taken by train **D** to go from Birmingham to London.

1 hr and 34 minutes = 94 mins

94 ..... minutes
(2)

Paula has to go to a meeting in London.
She will catch one of the six trains from Birmingham.
She needs to arrive in London before 09 00

(c) Write down the latest train that she can catch.

C
.....
(1) **Q18**

(Total 4 marks)

19. (a) Use your calculator to work out $\frac{2}{1.5+2.45}$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

0.506329113 9
.....
(2)

(b) Write your answer to part (a) correct to 2 decimal places.

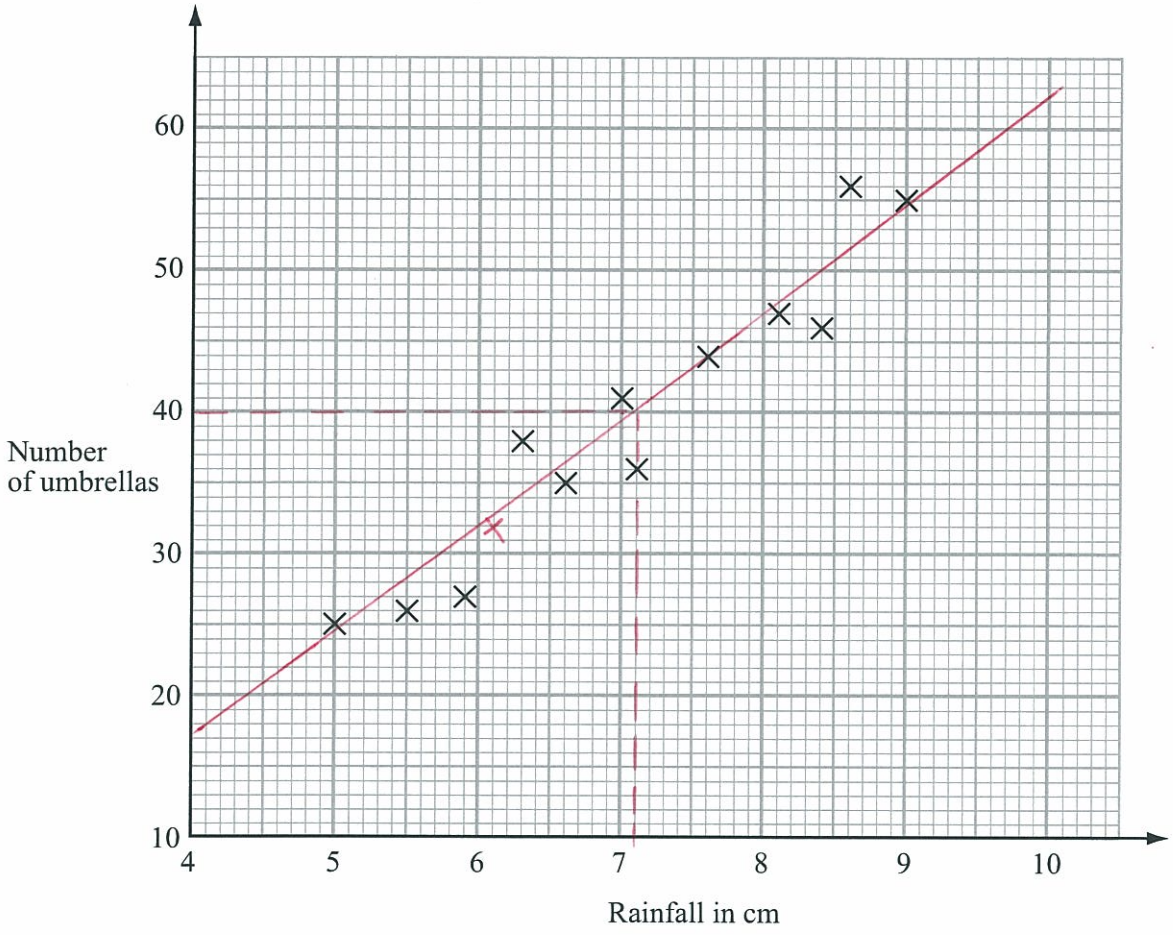
0.51
.....
(1) **Q19**

(Total 3 marks)

Leave blank

20. Mr Wither sells umbrellas.

The scatter graph shows some information about the number of umbrellas he sold and the rainfall, in cm, each month last year.



In January of this year, the rainfall was 6.1 cm.
During January, Mr Wither sold 32 umbrellas.

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does this scatter graph show?

Positive correlation

(1)

In February of this year, Mr Wither sold 40 umbrellas.

(c) Estimate the rainfall for February.

7.1 cm

(2)

Q20

(Total 4 marks)

Leave blank

21. In August 2008, Eddie hired a car in Italy.

The cost of hiring the car was £620
The exchange rate was £1 = €1.25

(a) Work out the cost of hiring the car in euros (€).

620 x 1·25

€ 775
(2)

Eddie bought some perfume in Italy.

The cost of the perfume in Italy was €50
The cost of the same perfume in London was £42

The exchange rate was still £1 = €1.25

(b) Work out the difference between the cost of the perfume in Italy and the cost of the perfume in London.
Give your answer in pounds (£).

$\frac{50}{1.25}$ = £40 (Italy)

Cost of perfume in London (£) − Cost of perfume in Italy (£)

= 42 − 40 = £2

£ 2
(3)

(Total 5 marks)

Q21

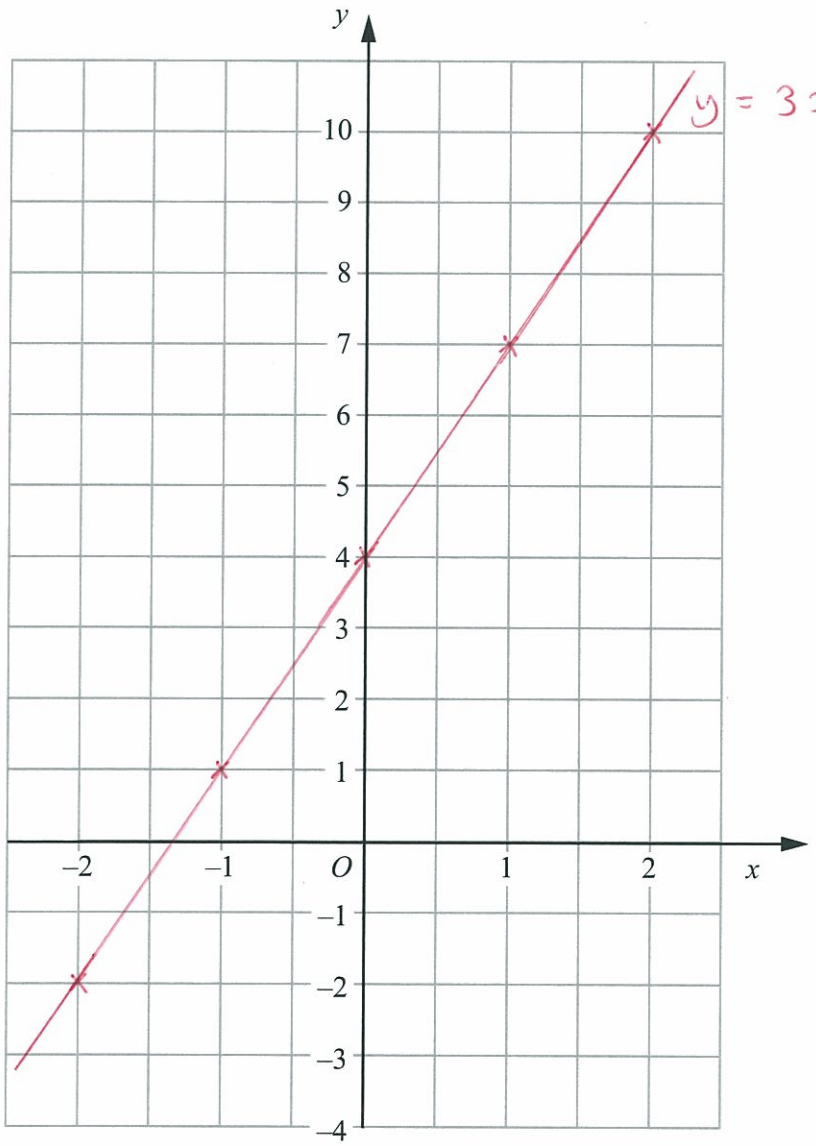
Leave blank

22. (a) Complete the table of values for $y = 3x + 4$

x	–2	–1	0	1	2
y	-2	1	4	7	10

(2)

(b) On the grid, draw the graph of $y = 3x + 4$



(2)

Q22

(Total 4 marks)

Leave blank

23. (a)

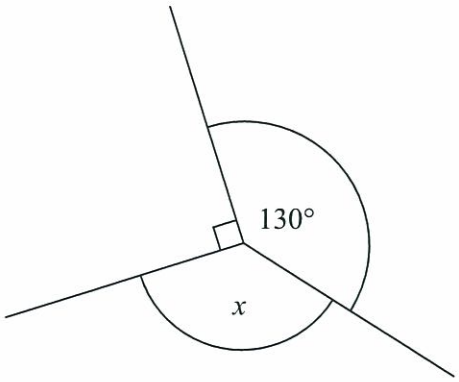


Diagram **NOT** accurately drawn

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

$360 - (90 + 130) = 360 - 220 = 140°$ 140 °

(ii) Give a reason for your answer.

Angles round a point add to 360°

(3)

(b)

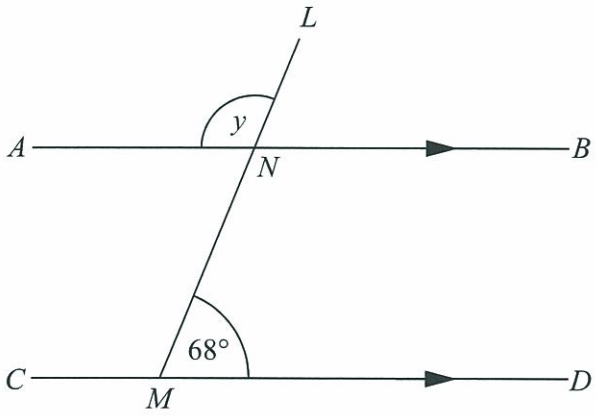
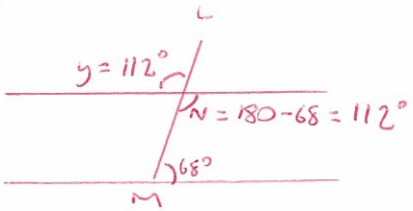


Diagram **NOT** accurately drawn

ANB is parallel to *CMD*.
LNM is a straight line.
Angle *LMD* = 68°



(i) Work out the size of the angle marked y.

$y = N$ and $N = 180 - 68°$ 112 °

(ii) Give reasons for your answer.

The inner angles M and N are supplementary, i.e. they add to 180°. Also, y = N since vertically opposite angles are equal.

(3) **Q23**

(Total 6 marks)

Leave blank

24. The equation

$$x^3 + 10x = 25$$

has a solution between 1 and 2

Use a trial and improvement method to find this solution.
Give your answer correct to one decimal place.
You must show **all** your working.

x	$x^3 + 10x$	
1.5	18.375	< 25 (try out a larger value for x)
1.8	23.832	< 25 .....
1.9	25.859	> 25
1.85	24.831625	< 25

The final row in the table indicates that $1.85 < x < 1.9$
$\Rightarrow$ x is closer to 1.9 than it is to 1.8 and so
$x = 1.9$ (to 1d.p.).

$x =$ 1.9 Q24

(Total 4 marks)

Leave blank

25. There are some ribbons in a box.
The ribbons are green or red or yellow or white.

The table shows each of the probabilities that a ribbon chosen at random will be green or red or white.

Colour	**Green**	**Red**	**Yellow**	**White**
Probability	0.15	0.30		0.35

(a) Work out the probability that a ribbon chosen at random will be yellow.

$1 - (0.15 + 0.3 + 0.35)$

$= 1 - 0.8$

$= 0.2$

0.2

.....

(2)

There are 500 ribbons in the box.

(b) Work out the number of red ribbons.

$0.30 \times 500 = 150$

150

.....

(2) **Q25**

(Total 4 marks)

Leave blank

26.

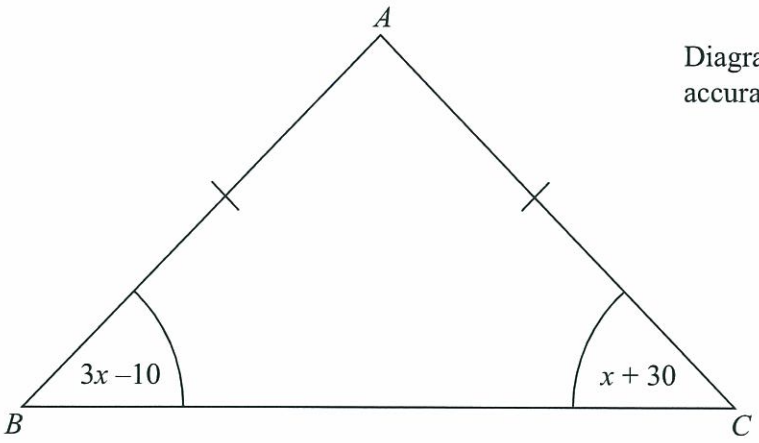


Diagram **NOT** accurately drawn

ABC is an isosceles triangle.
AB = *AC*

(a) Explain why $3x - 10 = x + 30$

Base angles of an isosceles triangle are equal.

(1)

(b) Solve $3x - 10 = x + 30$

$2x - 10 = 30$

$2x = 30 + 10$

$x = \frac{40}{2} = 20$

$x =$ 20

(2) **Q26**

(Total 3 marks)

Leave blank

27.

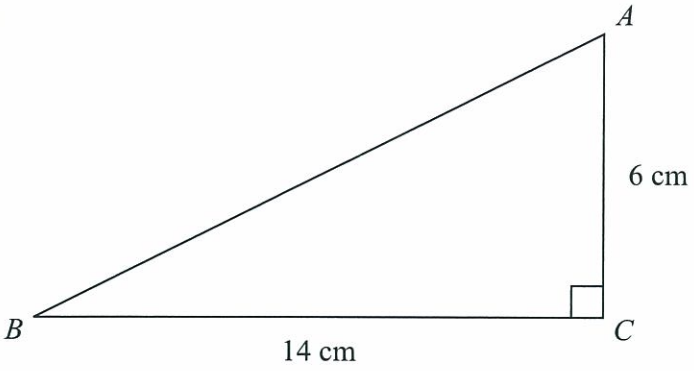


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
AC = 6 cm.
BC = 14 cm.

(a) Work out the area of triangle *ABC*.

Area of a triangle = $\frac{\text{Base} \times \text{Height}}{2}$

$= \frac{14(6)}{2} = 42\,\text{cm}^2$

42 ..... cm^2

(2)

(b) Calculate the length of *AB*.
Give your answer correct to 2 decimal places.

$(AB)^2 = 14^2 + 6^2$

$\Rightarrow AB = \sqrt{14^2 + 6^2} = \sqrt{232}$

$= 15.23\,\text{cm}$ (2 d.p.).

15.23 ..... cm

(3) Q27

(Total 5 marks)

TOTAL FOR PAPER: 100 MARKS

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