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

Paper Reference(s)

1380/2F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics (Linear) – 1380

Paper 2 (Calculator)

Foundation Tier

Tuesday 10 November 2009 – Morning

Time: 1 hour 30 minutes

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 29 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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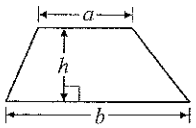
GCSE Mathematics (Linear) 1380

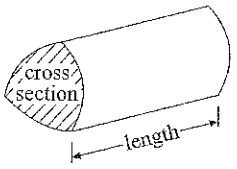
Formulae: Foundation Tier

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

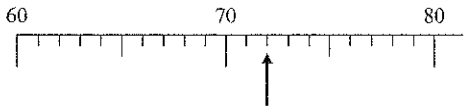


Leave blank

Answer ALL TWENTY NINE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

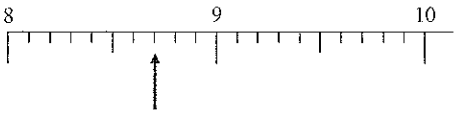
1. 

(a) Write down the number marked with an arrow.

72

.....

(1)

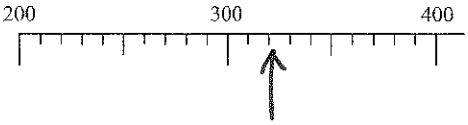


(b) Write down the number marked with an arrow.

8.7

.....

(1)



(c) Find the number 320 on the number line.

Mark it with an arrow (↑).

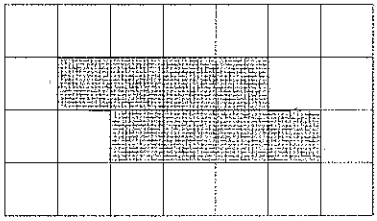
(1)

Q1

(Total 3 marks)

Leave blank

2. Here is a shaded shape drawn on a centimetre grid.



(a) (i) Find the area of the shaded shape.

8 ..... cm^2

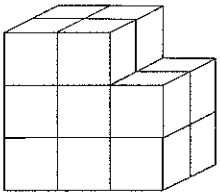
(ii) Find the perimeter of the shaded shape.

14 ..... cm

(2)

Here is a solid prism made of centimetre cubes.

(b) Find the volume of the solid prism.



16 ..... cm^3

(2)

(Total 4 marks)

Q2

Leave blank

3. The table gives some information about 5 girls.

Name	Age	Number of pets	Favourite subject
Adilah	11	1	Mathematics
Brianna	12	2	Art
Charlotte	11	4	English
Diana	13	3	PE
Emma	12	3	Art

(a) Write down the name of the oldest girl.

Diana

(1)

(b) Write down the name of the girl who is 11 years old and has 4 pets.

Charlotte

(1)

(c) Write down the name of the girl who has 3 pets and whose favourite subject is Art.

Emma

(1)

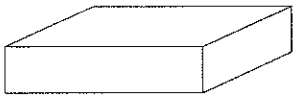
(Total 3 marks)

Q3

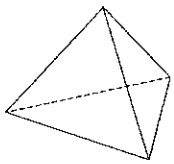
Leave blank

4. (a) Write down the name of each of these two 3-D shapes.

(i)



(ii)

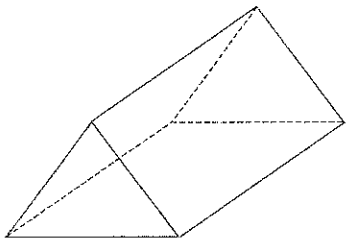


(i) Cubrid

(ii) Pyramid

(2)

(b) Here is a triangular prism.



(i) Write down the number of faces of this prism.

5

(ii) Write down the number of edges of this prism.

9

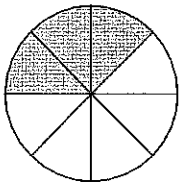
(2)

Q4

(Total 4 marks)

Leave blank

5. (a) What fraction of this shape is shaded?

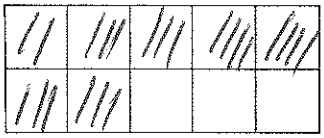


$\frac{3}{8}$

.....

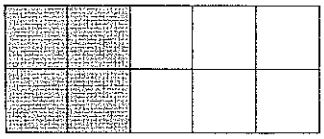
(1)

(b) Shade 0.7 of this shape.



(1)

(c) What percentage of this shape is shaded?



$\frac{4}{10} \times 100 = 40$

or $0.4 \times 100 = 40$

40 %

(1)

Q5

(Total 3 marks)

Leave blank

6. Here is part of a train timetable.

Station	Time of leaving
Leeds	0805
Wakefield	0817
Doncaster	0836
Peterborough	0926
Stevenage	0958

(a) At what time should the train leave Doncaster?

08 36

(1)

James arrives at Peterborough station at 0915
He wants to catch the 0926 train.

(b) How many minutes should he have to wait?

11 minutes

(1)

The train leaves Stevenage at 0958
It takes 27 minutes to travel to London.

(c) At what time does the train arrive in London?

10 25

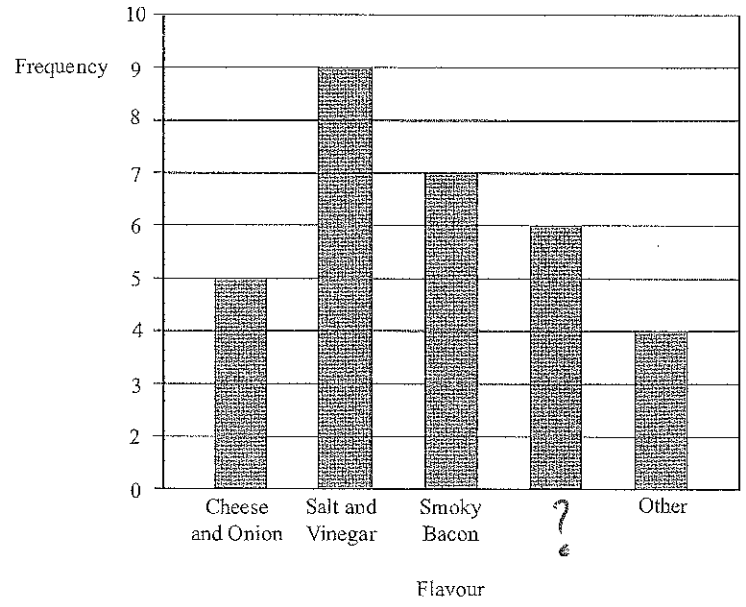
(1)

Q6

(Total 3 marks)

Leave blank

7. William asked some students which flavour of crisps they like best.
He drew this bar chart to show the results.



Write down two things wrong with William's bar chart.

1 Flavour missing for a bar.

2 Frequency axes not in regular steps - (1 missing)

(Total 2 marks)

Q7

Leave blank

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

5 9 13 17

(a) (i) Write down the next term of the number sequence.

21

(ii) Explain how you found your answer.

+ 4 (term to term rule +4)

(2)

The 25th term of the number sequence is 101

(b) Work out the 26th term of the number sequence.

25th term 101

26th term 101+4

105

(1)

(Total 3 marks)

Q8

9. (a) Write down the value of 10^2

10 x 10

100

(1)

(b) Write down the value of $\sqrt{49}$

7 x 7 = 49

7

(1)

(c) Write down the value of 2^3

$2^3 = 2 \times 2 \times 2 = 8$

8

(1)

(Total 3 marks)

Q9

Leave blank

10. Here is a list of 7 numbers.

16 18 19 20 28 33 36

From the list, write down

(a) the odd number larger than 20

33

(1)

(b) the prime number

19

(1)

(c) **two** numbers with a difference of 10

$18 + 10 = 28 \therefore 28 - 18 = 10$

18 and 28

(1)

(d) a multiple of 9

9, (18), 27 ...

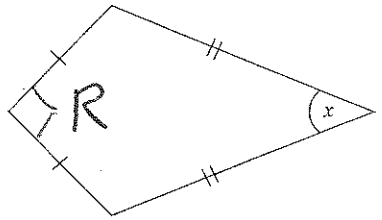
18

(1)

(Total 4 marks)

Q10

11. This quadrilateral has two pairs of equal sides.



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

Kite

(1)

(b) On the diagram, mark with the letter R, the right angle.

(1)

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

Acute angle

(1)

(Total 3 marks)

Q11

Leave blank

12. Rosie made a list of her test marks.

2 3 3 2 4 7 7 10 7

(a) Write down the mode.

7 comes up 3 times,

7

(1)

(b) Work out the range of her marks.

Range = Highest − Lowest

10 − 2

8

(2)

(c) Work out her mean mark.

$$\text{Mean mark} = \frac{2+3+3+2+4+7+7+10+7}{9}$$

5

(2)

(Total 5 marks)

Q12

13. (a) Simplify $3p + 4p$

7p

(1)

(b) Simplify $e \times f \times 5$

$ef \times 5 = 5ef$

5ef

(1)

(c) Simplify $y^2 + y^2 + y^2$

$3y^2$

(1)

(Total 3 marks)

Q13

Leave blank

14.

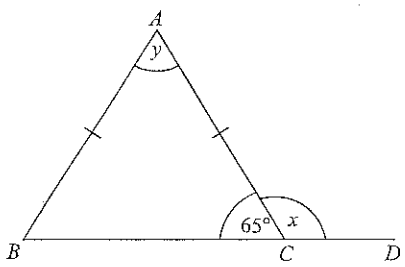


Diagram **NOT** accurately drawn

BCD is a straight line.
AB = *AC*.

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

$x = 180 - 65$

115 °

(ii) Give a reason for your answer.

Angles on straight line add up to 180°.

(2)

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

$y = 180 - (65 + 65)$

$y = 50$

50 °

(ii) Give reasons for your answer.

△ ABC isosceles and angles in △ add up to 180°.

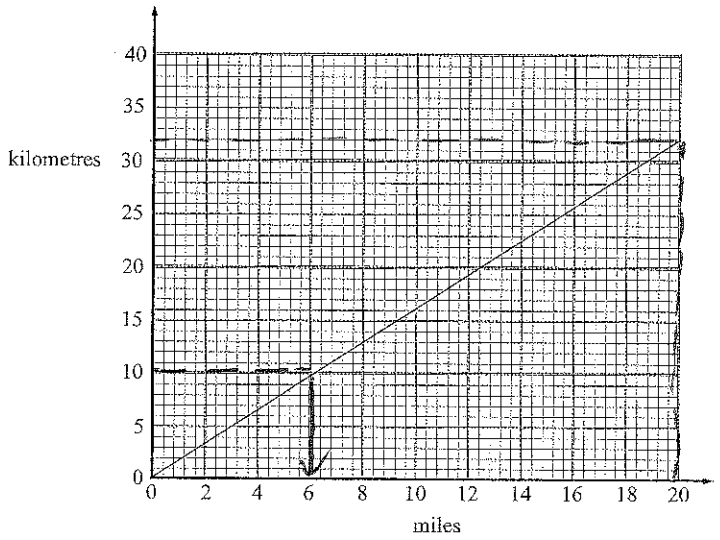
(3)

Q14

(Total 5 marks)

Leave blank

15. The graph can be used for changing between miles and kilometres.



(a) Use the graph to change 12 miles to kilometres.

19.5 kilometres

(1)

(b) Use the graph to change 10 kilometres to miles.

6 miles

(1)

Matthew travelled 100 miles.

(c) Change 100 miles to kilometres.

5x (20 miles → 32 km (graph
100 miles → 32x5
160

160 kilometres

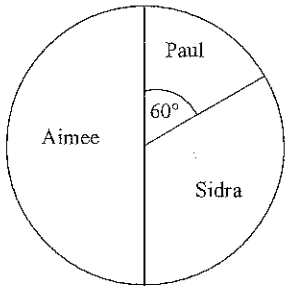
(2)

Q15

(Total 4 marks)

Leave blank

16. The accurate pie chart gives some information about the votes received by 3 students in an election.



The students received a total of 84 votes.

(a) How many votes did Aimee receive?

$\frac{1}{2}$ of 84 = 42

42

(1)

In the pie chart, the angle for Paul is 60°.

(b) What fraction of the votes did Paul receive?
Give your fraction in its simplest form.

$\frac{60}{360} = \frac{1}{6}$

1/6

(2) **Q16**

(Total 3 marks)

Paul received 1/6 of the total votes.

$\frac{1}{6} \times 84 = 14$ votes.

Leave blank

17.

Prices	
Apples	£2.00 per kg
Oranges	£0.34 each
Tomatoes	£2.40 per kg

Emma buys

1 kg of apples → 2.00 = 2.00

2 oranges → 0.34 × 2 = 0.68

$\frac{3}{4}$ kg tomatoes → $\frac{3}{4}$ × 2.40 = 1.80

Work out the total cost.

2.00 + 1.80 + 0.68 = 4.48

£ 4.48

Q17

(Total 4 marks)

18. $p = 2$

$q = -4$

Work out the value of $3p + 5q$

3 × 2 + 5 × −4

6 + −20 = 6 − 20

= −14

−14

Q18

(Total 2 marks)

Leave blank

19. Colin goes to Switzerland.
The exchange rate is £1 = 2.30 francs.

£1 → 2.30 Fr.
£400 → 400 × 2.30

He changes £400 into francs.

(a) How many francs should he get?

400 × 2.30

920 francs
(2)

In Switzerland, Colin buys a hat.
The cost of the hat is 46 francs. (How many pounds is 46 francs)

(b) Work out the cost of the hat in pounds.

46 ÷ 2.30 = 20

£ 20
(2) Q19

(Total 4 marks)

20. (a) Use your calculator to work out the value of $\frac{8.7 \times 12.3}{9.5 - 5.73}$

Write down all the digits from your calculator.
Give your answer as a decimal.

[(] [8.7] [×] [12.3] [)] [÷] [(] [9.5] [−] [5.73] [)]

28.384615
(2)

(b) Write your answer to part (a) correct to 1 significant figure.

2 | 8.3
↑ ↑ 2sf
1sf

30
(1) Q20

(Total 3 marks)

Leave blank

21. (a) Solve $m + 5 = 12$

$m = 12 - 5$

$m =$ 7

(1)

(b) Solve $3n = 36$

$\frac{3n}{3} = \frac{36}{3} \Rightarrow n = 12$

$n =$ 12

(1)

(c) Solve $\frac{x}{5} = 10$

$5 \times \frac{x}{5} = 10 \times 5$

$x = 50$

$x =$ 50

(1)

(d) Solve $4y + 7 = 13$

$4y + 7 - 7 = 13 - 7$

$\frac{4y}{4} = \frac{6}{4} = \frac{3}{2}$

$y = 1.5$

$y =$ 1.5

(2)

(Total 5 marks)

Q21

22. Ali asked 200 students which sport they like best.
They could choose swimming or tennis or athletics.

The two-way table shows some information about their answers.

	Swimming	Tennis	Athletics	Total
Female	43	25	19	87
Male	36	42	35	113
Total	79	67	54	200

(a) Complete the two-way table.

(3)

One of these 200 students is picked at random.

(b) Write down the probability that this student likes swimming best.

$\frac{79}{200} \leftarrow$ (students like swim) / Total students

0.395

≈ 0.4

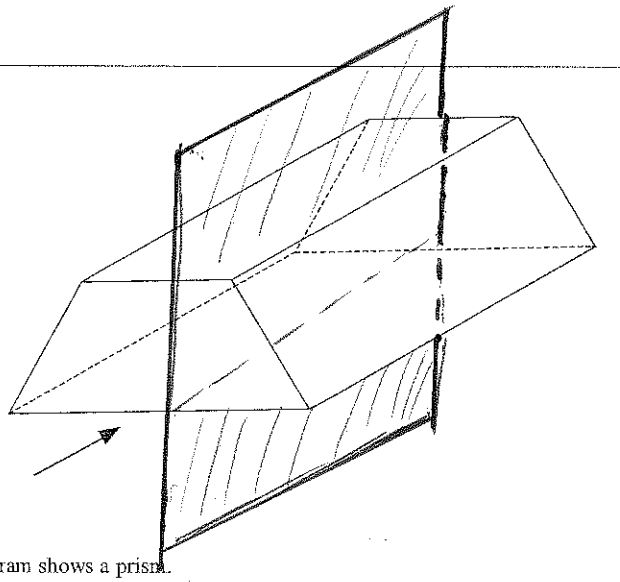
(1)

(Total 4 marks)

Q22

Leave blank

23.

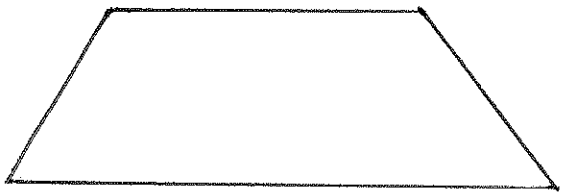


The diagram shows a prism.

(a) On the diagram, draw in **one** plane of symmetry for the prism.

(2)

(b) In the space below, sketch the front elevation from the direction marked with an arrow.

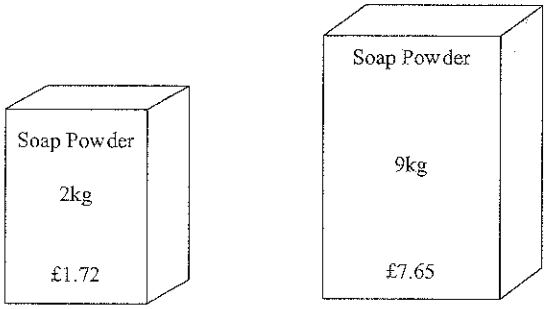


(2) Q23

(Total 4 marks)

Leave blank

24. Soap powder is sold in two sizes of box.



Small box Large box

A small box contains 2 kg of soap powder and costs £1.72 → 1.72 ÷ 2 = 0.86
A large box contains 9 kg of soap powder and costs £7.65 → 7.65 ÷ 9 = 0.85

Which size of box gives the better value for money?

Large box.

Explain your answer.
You must show all your working.

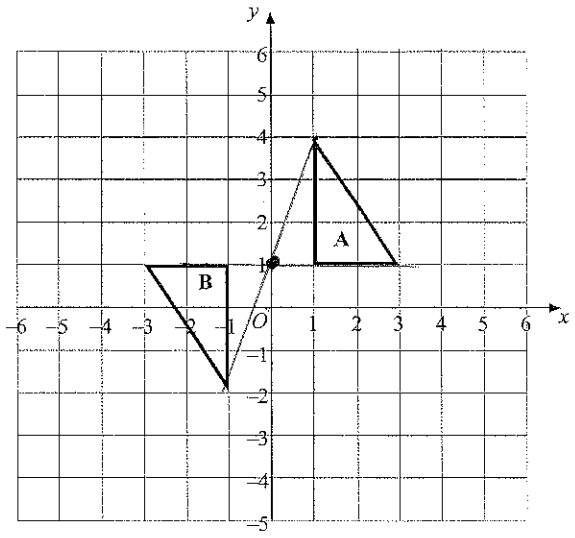
Small box 86 pence per 1kg.
large box 85 pence per 1kg.
- 1pence difference -

Q24

(Total 3 marks)

Leave blank

25.



Describe fully the single transformation that maps triangle **A** onto triangle **B**.

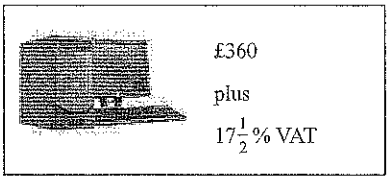
Rotation, 180° centre (0,1).

Q25

(Total 3 marks)

26. A computer costs £360 plus $17\frac{1}{2}$% VAT.

Calculate the total cost of the computer.



Total cost = 360 + VAT

VAT = $\frac{17.5}{100}$ = 0.175

VAT = 0.175 × 360 = £63

on computer

Total = 360 + 63

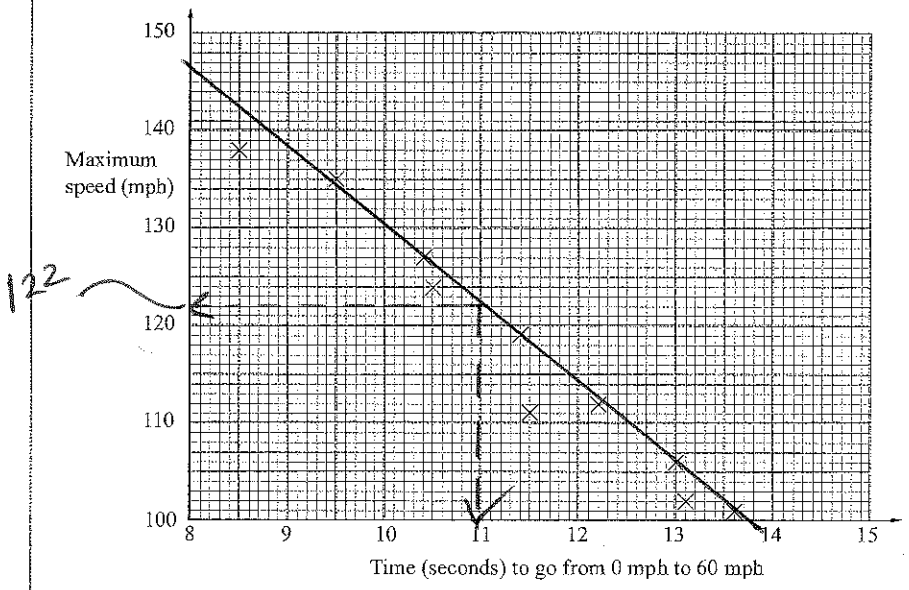
£ 423

Q26

(Total 3 marks)

Leave blank

27. The scatter graph shows some information about 10 cars.
It shows the time, in seconds, it takes each car to go from 0 mph to 60 mph.
For each car, it also shows the maximum speed, in mph.



122

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

Negative

(1)

The time a car takes to go from 0 mph to 60 mph is 11 seconds.

(b) Estimate the maximum speed for this car.

112 mph

(2)

Q27

(Total 3 marks)

Leave blank

28. A piece of wood is 180 cm long.
Tom cuts it into three pieces in the ratio 2 : 3 : 4

Work out the length of the longest piece.

$2+3+4=9$

1 part is worth $180 \div 9 = 20$ cm

Longest piece $= 20 \times 4 = 80$

80 ..... cm

Q28

(Total 3 marks)

29. The equation

$$x^3 + 2x = 60$$

has a solution between 3 and 4

Use a trial and improvement method to find this solution.
Give your answer correct to 1 decimal place.
You must show all your working.

Low 3.75 High

3.7 High 3.8

x	$x^3 + 2x$	H? L?
3	$3^3 + 2 \times 3 = 33$	Low
4	$4^3 + 2 \times 4 = 72$	High
3.5	$3.5^3 + 2 \times 3.5 = 49.875$	Low
3.7	$3.7^3 + 2 \times 3.7 = 58.053$	Low
3.8	$3.8^3 + 2 \times 3.8 = 62.472$	High
3.75	$3.75^3 + 2 \times 3.75 = 60.23$	High

answer between 3.70 and 3.75
could be 3.71, 3.72, 3.73, 3.74

$x =$ 3.7 .....

Q29

(Total 4 marks)

to 1 dp $x = 3.7$

TOTAL FOR PAPER: 100 MARKS

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