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

Paper Reference(s)

5540F/2F

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics A (Linear) – 2540

Paper 2 (Calculator)

Foundation Tier

Wednesday 12 November 2008 – 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 30 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 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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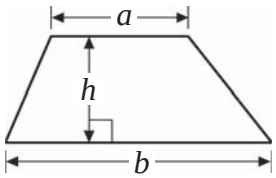
GCSE Mathematics (Linear) 2540

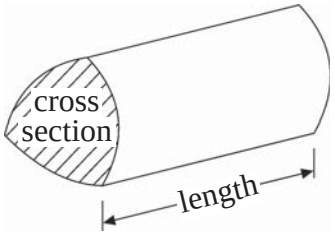
Formulae: Foundation Tier

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 THIRTY questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. The pictogram shows the number of plates sold by a shop on Monday,Tuesday,Wednesday and Thursday of one week.

Monday	◯ ◯
Tuesday	◯ ◖
Wednesday	◯ ◯ ◯
Thursday	◯
Friday	
Saturday	

Key: ◯ represents 10 plates

(a) Work out the number of plates sold on Monday.

.....

(1)

(b) Work out the number of plates sold on Tuesday.

.....

(1)

The shop sold 40 plates on Friday.
The shop sold 25 plates on Saturday.

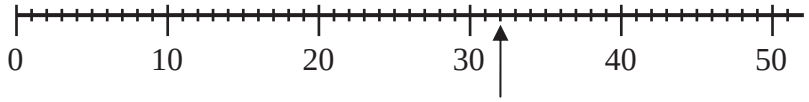
(c) Use this information to complete the pictogram.

(2) **Q1**

(Total 4 marks)

Leave blank

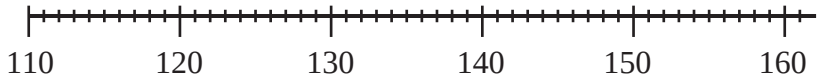
2.



(a) Write down the number marked by the arrow.

.....

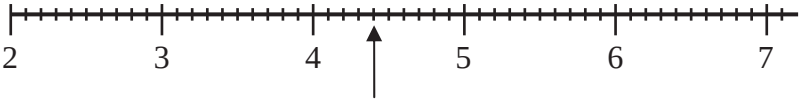
(1)



(b) Find the number 127 on the number line.

Mark it with an arrow (↑).

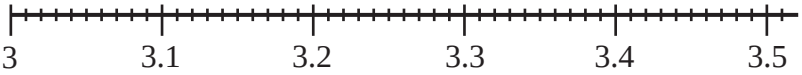
(1)



(c) Write down the number marked by the arrow.

.....

(1)



(d) Find the number 3.18 on the number line.

Mark it with an arrow (↑).

(1) **Q2**

(Total 4 marks)

Leave blank

3. Here is part of a train timetable from Peterborough to London.

Station	Time of leaving
Peterborough	08 44
Huntingdon	09 01
St Neots	09 08
Sandy	09 15
Biggleswade	09 19
Arlesey	09 24

(a) Which station should the train leave at 09 01?

.....

(1)

The train arrives in Sandy at 09 12

(b) How many minutes should the train wait in Sandy?

..... minutes

(1)

The train should take 41 minutes to travel from Arlesey to London.

(c) What time should the train arrive in London?

.....

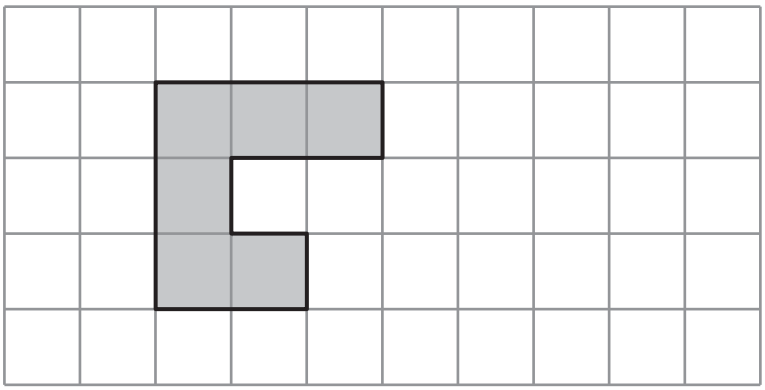
(1)

Q3

(Total 3 marks)

Leave blank

4.



The shaded shape is drawn on a grid of centimetre squares.

(a) Find the perimeter of the shaded shape.

..... cm

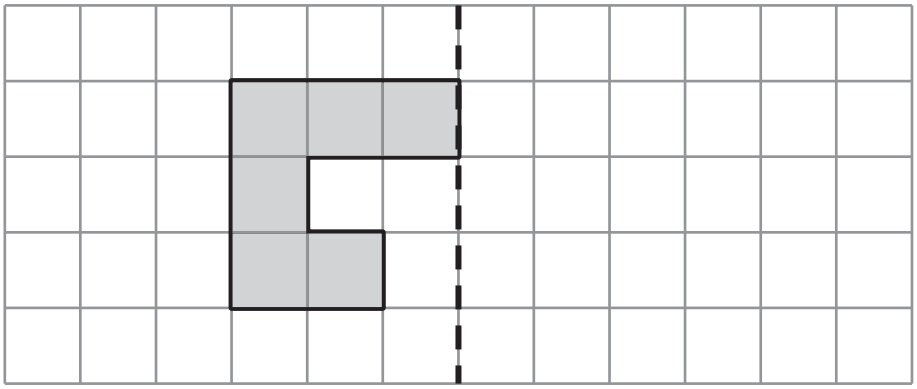
(1)

(b) Find the area of the shaded shape.

..... cm^2

(1)

Mirror Line



(c) Reflect the shaded shape in the mirror line.

(1)

Leave blank

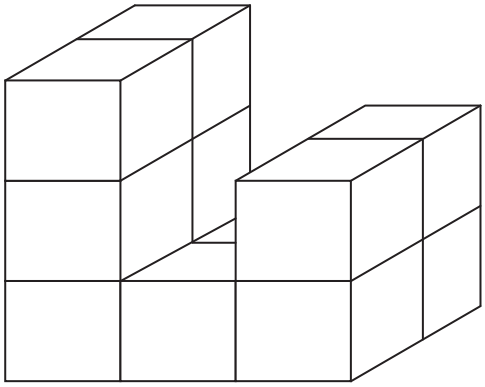


Diagram **NOT** accurately drawn

Here is a prism made of centimetre cubes.

(d) Find the volume of the prism.

..... cm^3

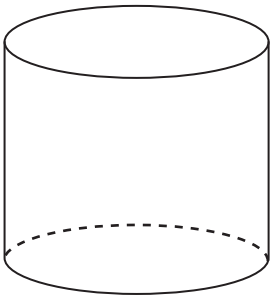
(1)

Q4

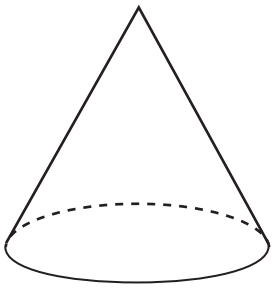
(Total 4 marks)

5. Write down the mathematical name of each of these two 3-D shapes.

(i)



(ii)



(i) .....

(ii) .....

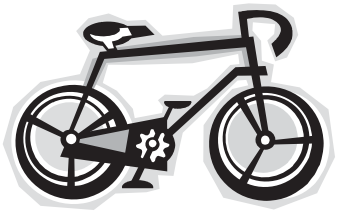
Q5

(Total 2 marks)

Leave blank

6. Complete this bill.

Michael's Cycle Repairs



Description	**Number**	**Cost of each item**	**Total**
Brake blocks	4	£4.12	£16.48
Brake cables	2	£5.68	£.....
Pedals	2	£.....	£45.98
Labour charge $1\frac{1}{2}$ hours at £12.00 an hour			£.....
Total			£.....

Q6

(Total 4 marks)

7. Here are the first 4 terms in a number sequence.

2 5 8 11

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

.....

(1)

Here are the first 4 terms in another number sequence.

18 13 8 3

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

.....

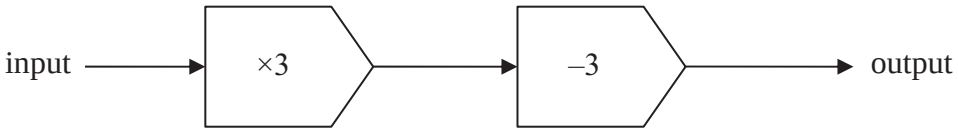
(1)

Q7

(Total 2 marks)

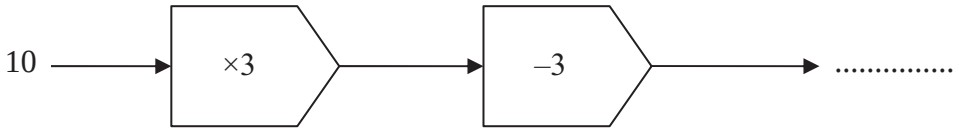
Leave blank

8. The diagram shows a mathematical rule.



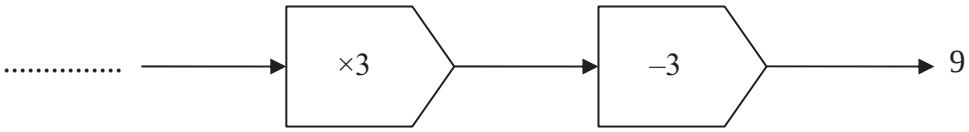
It multiplies a number by 3 and then subtracts 3

(a) Complete the diagram.



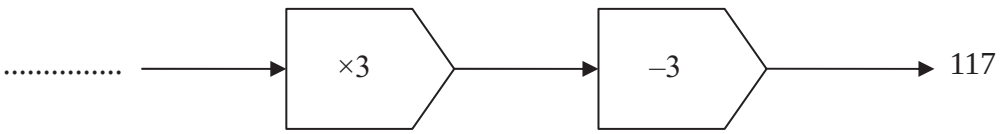
(1)

(b) Complete the diagram.



(1)

(c) Complete the diagram.

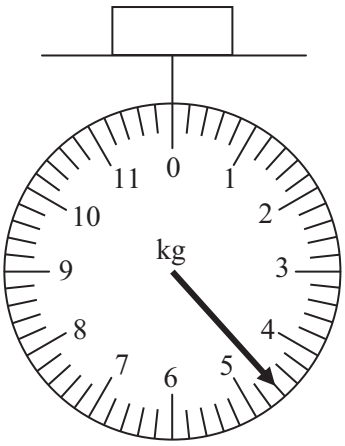


(1) **Q8**

(Total 3 marks)

Leave blank

9.



(a) Write down the weight in kg shown on this scale.

..... kg
(1)

(b) (i) How many pounds are there in 1 kg?

..... pounds

The weight of a baby is 5 kg.

(ii) Change 5 kg to pounds.

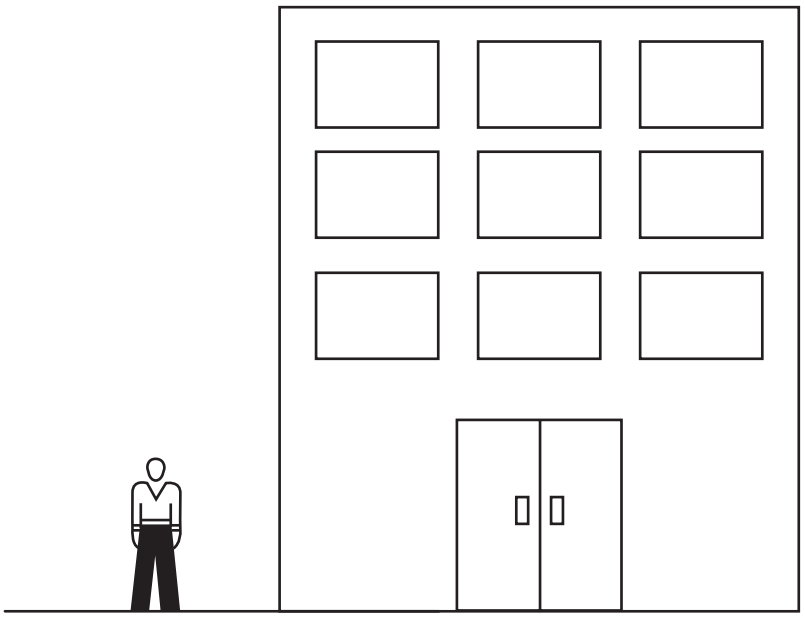
..... pounds
(2)

Q9

(Total 3 marks)

Leave blank

10.



The diagram shows a building and a man.
The man is of normal height.
The man and the building are drawn to the same scale.

(a) Write down an estimate for the height of the man.

.....

(1)

(b) Write down an estimate for the height of the building.

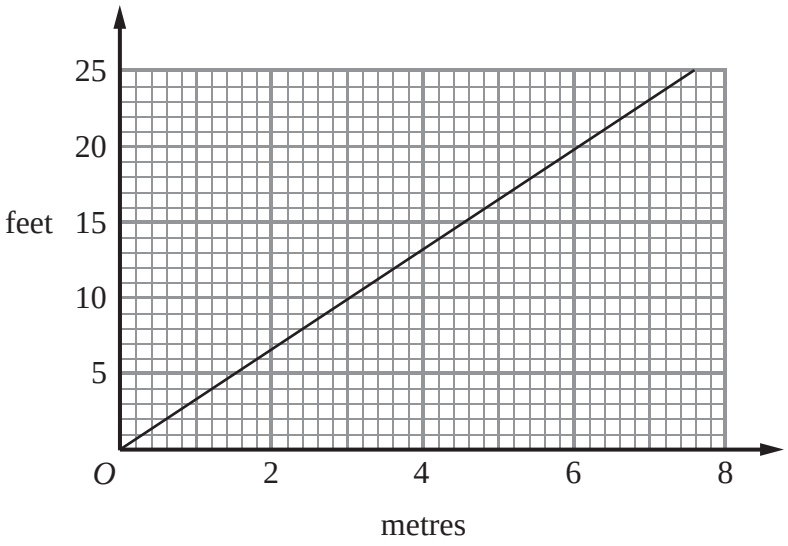
.....

(2) **Q10**

(Total 3 marks)

Leave blank

11.



This conversion graph can be used to change between metres and feet.

(a) Use the conversion graph to change 6 metres to feet.

..... feet
(1)

(b) Use the conversion graph to change 8 feet to metres.

..... metres
(1)

Robert jumps 4 metres.
James jumps 12 feet.

(c) (i) Who jumps furthest, Robert or James?

.....

(ii) How did you get your answer?

.....

.....

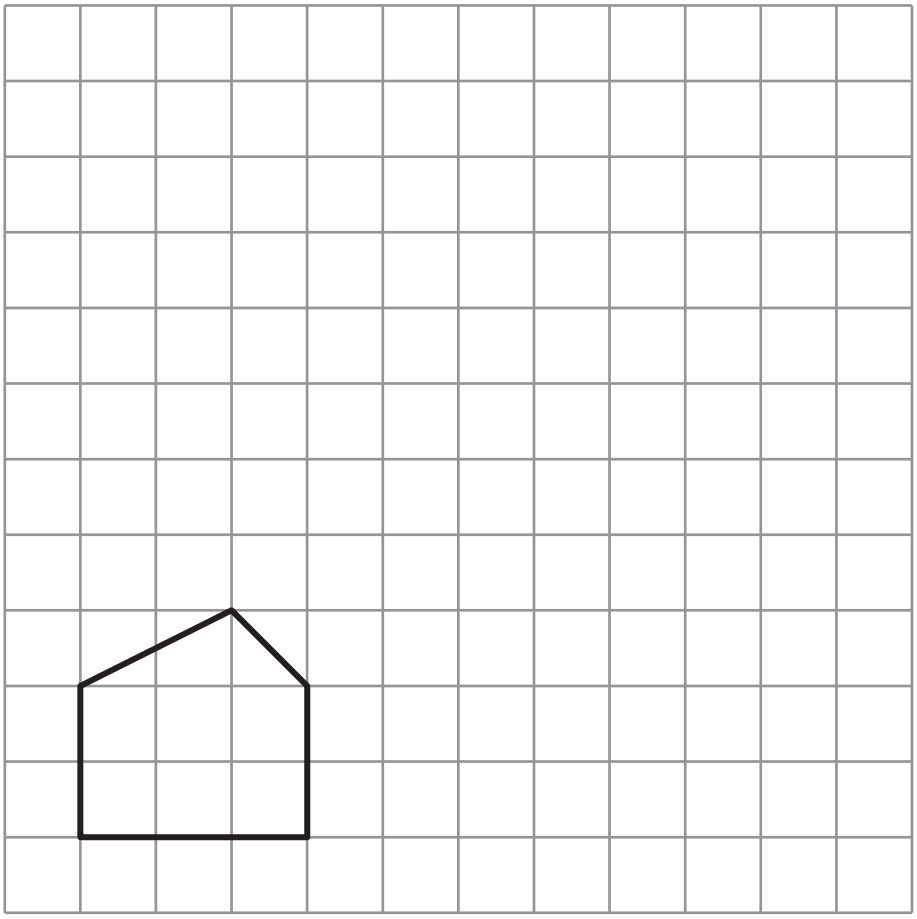
(2)

Q11

(Total 4 marks)

Leave blank

12.



On the grid, enlarge the shape with a scale factor of 2

Q12

(Total 2 marks)

13. A blue stick is 1.42 metres long.
A red stick is 3 centimetres shorter than the blue stick.

Work out the length of the red stick.
Give your answer in metres.

..... m

Q13

(Total 2 marks)

Leave blank

14. A television reporter did a survey.
She asked people to name their favourite sport.
The table gives some information about the answers she got.

Favourite Sport	Percentage
Football	30 %
Cricket	14 %
Hockey	9 %
Snooker	8 %
Tennis	4 %
Other	.....

(a) Complete the table.

(1)

(b) Write down the percentage of people who said snooker.

..... %
(1)

(c) Write 30% as a fraction.
Give your answer in its simplest form.

.....
(2)

(d) Write 9% as a decimal.

.....
(1)

Leave blank

2000 people took part in the survey.

(e) Work out the number of people who said cricket.

.....
(2)

40 people said golf.

(f) Work out 40 out of 2000 as a percentage.

..... %
(2)

Q14

(Total 9 marks)

15. Here are ten numbers.

7 6 8 4 5 9 7 3 6 7

(a) Work out the range.

.....
(2)

(b) Work out the mean.

.....
(2)

Q15

(Total 4 marks)

Leave blank

16. Work out 28% of £85 000

£ .....

Q16

(Total 2 marks)

17. Use a calculator to work out

$$\sqrt{2.56} + 8.4$$

.....

Q17

(Total 2 marks)

Leave blank

18. (a) Solve $2x = 10$

$x =$ .....

(1)

(b) Solve $y - 3 = 8$

$y =$ .....

(1)

(c) Solve $4t + 1 = 19$

$t =$ .....

(2)

(d) Solve $4w + 8 = 2w + 7$

$w =$ .....

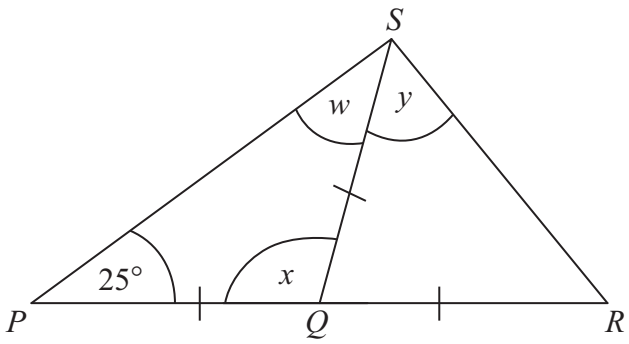
(2) **Q18**

(Total 6 marks)

Leave blank

19.

Diagram **NOT** accurately drawn



PQR is a straight line.

PQ = *QS* = *QR*.

Angle *SPQ* = 25°.

(a) (i) Write down the size of angle *w*.

.....°

(ii) Work out the size of angle *x*.

.....°

(2)

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

.....°

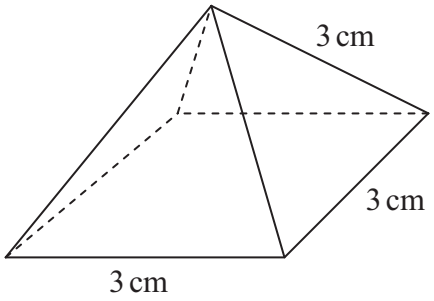
(2) **Q19**

(Total 4 marks)

Leave blank

20.

Diagram **NOT** accurately drawn



The diagram shows a pyramid with a square base.

The length of each side of the base is 3 cm.

The length of each sloping edge is 3 cm.

On the grid of centimetre squares, draw an accurate net of the pyramid.

Q20

(Total 3 marks)

Leave blank

21. Jason collected some information about the heights of 19 plants.

This information is shown in the stem and leaf diagram.

1	1	2	3	3		
2	3	3	5	9	9	
3	0	2	2	6	6	7
4	1	1	4	8		

Key: 4|8 means 48 mm

Find the median.

..... mm

(Total 2 marks)

Q21

Leave blank

22. Here are the ingredients for making cheese pie for 6 people.

Cheese pie for **6** people
180 g flour
240 g cheese
80 g butter
4 eggs
160 m*l* milk

Bill makes a cheese pie for 3 people.

(a) Work out how much flour he needs.

..... g
(2)

Jenny makes a cheese pie for 15 people.

(b) Work out how much milk she needs.

..... m*l*
(2)

Q22

(Total 4 marks)

Leave blank

23. The nth term of a sequence is $n^2 + 4$

Alex says

"The nth term of the sequence is always a prime number when n is an odd number."

Alex is wrong.

Give an example to show that Alex is wrong.

Q23

(Total 2 marks)

24. The weight of a bag of potatoes is 25 kg, correct to the nearest kg.

(a) Write down the smallest possible weight of the bag of potatoes.

..... kg

(1)

(b) Write down the largest possible weight of the bag of potatoes.

..... kg

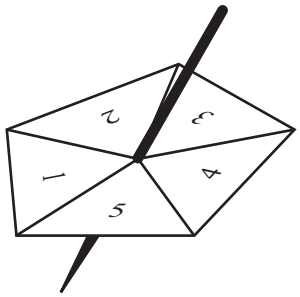
(1)

Q24

(Total 2 marks)

Leave blank

25. Here is a 5-sided spinner.



The sides of the spinner are labelled 1, 2, 3, 4 and 5
The spinner is biased.
The probability that the spinner will land on each of the numbers 1, 2, 3 and 4 is given in the table.

Number	1	2	3	4	5
Probability	0.15	0.05	0.2	0.25	x

Work out the value of x.

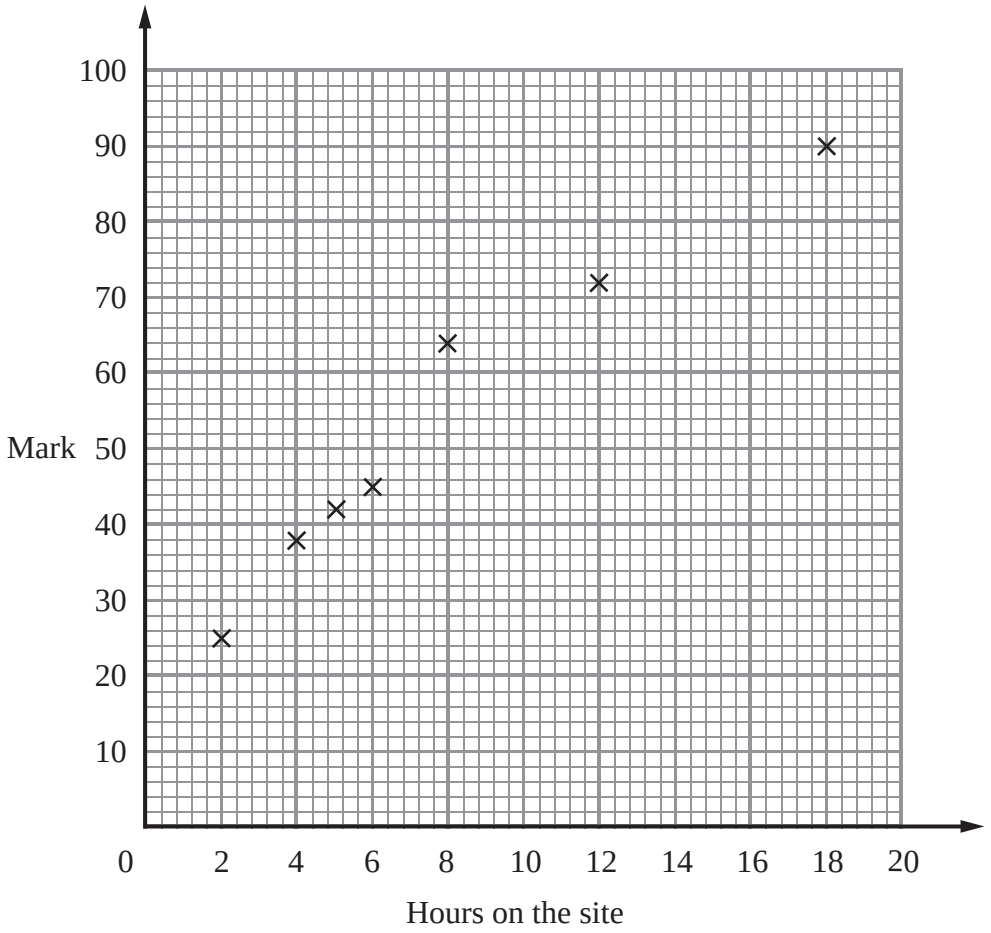
$x =$ .....

Q25

(Total 2 marks)

Leave blank

26. Some students revised for a mathematics exam.
They used an internet revision site.
The scatter graph shows the times seven students spent on the internet revision site and the marks the students got in the mathematics exam.



Here is the information for 3 more students.

Hours on the site	7	10	16
Mark	50	56	78

(a) Plot this information on the scatter graph.

(1)

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

.....

(1)

(c) Draw a line of best fit on the scatter graph.

(1)

Leave blank

A student spent 11 hours on the internet revision site.

(d) Use the line of best fit to estimate this student's mathematics exam mark.

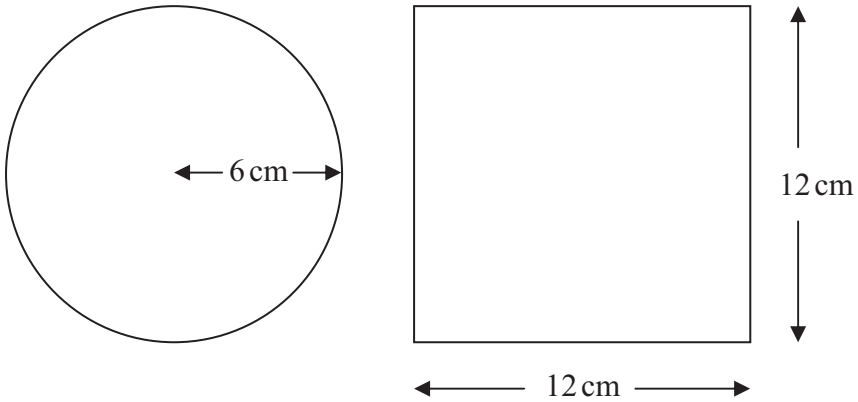
.....

(1) **Q26**

(Total 4 marks)

27.

Diagram **NOT** accurately drawn



A circle has a radius of 6 cm.

A square has a side of length 12 cm.

Work out the difference between the area of the circle and the area of the square.
Give your answer correct to one decimal place.

..... cm^2 **Q27**

(Total 4 marks)

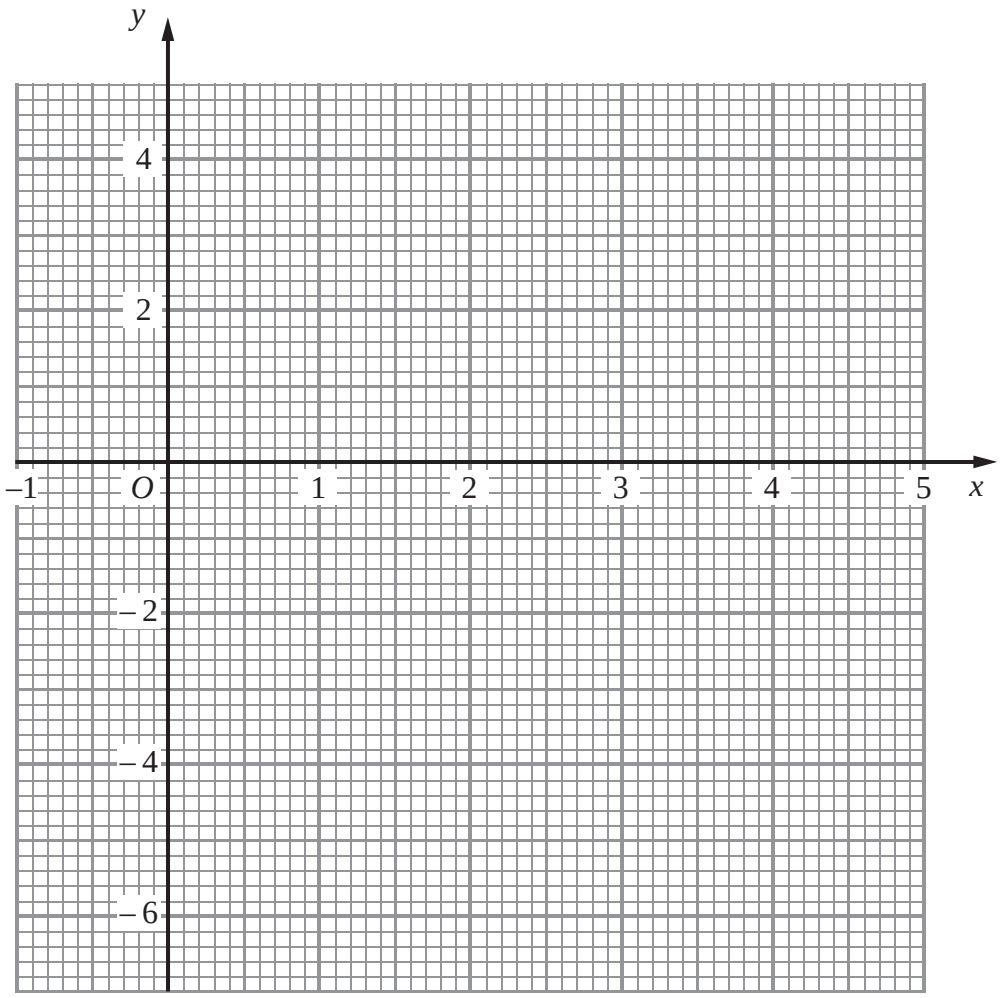
Leave blank

28. (a) Complete the table of values for $y = x^2 - 4x - 2$

x	–1	0	1	2	3	4	5
y		–2	–5			–2	3

(2)

(b) On the grid, draw the graph of $y = x^2 - 4x - 2$



(2)

(c) Use your graph to estimate the values of x when $y = –3$

$x =$ .....

$x =$ .....

(2) **Q28**

(Total 6 marks)

Leave blank

29. Draw the locus of all points which are equidistant from the points *A* and *B*.

Q29

(Total 2 marks)

30. Find the Lowest Common Multiple (LCM) of 24 and 36

.....

Q30

(Total 2 marks)

TOTAL FOR PAPER: 100 MARKS

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