

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

Paper Reference(s)

5540F/2F

Edexcel GCSE

Mathematics A (Linear) – 2540

Paper 2 (Calculator)

Foundation Tier

Monday 2 June 2008 – Afternoon

Time: 1 hour 30 minutes



Examiner's use only

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Team Leader's use only

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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 28 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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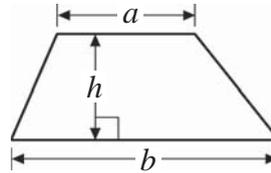
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GCSE Mathematics (Linear) 2540

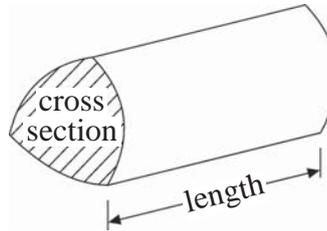
Formulae: Foundation Tier

**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 \times length

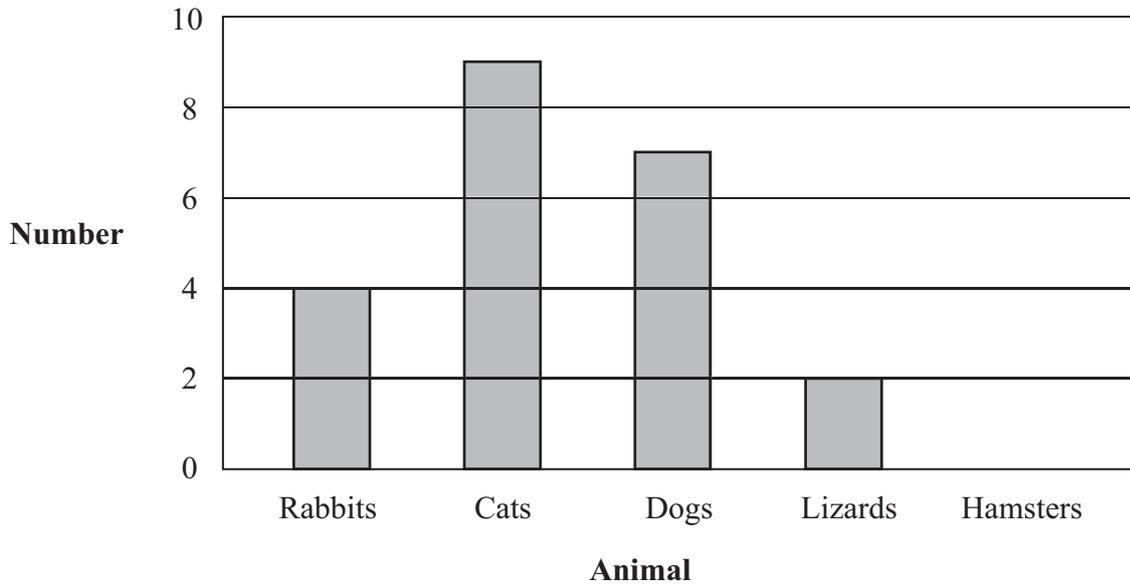


Answer ALL TWENTY EIGHT questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

- 1.** This bar chart gives information about the numbers of rabbits, cats, dogs and lizards taken to a vet on Monday.



- (a) Write down the number of rabbits taken to the vet on Monday.

.....
(1)

- (b) Write down the number of dogs taken to the vet on Monday.

.....
(1)

5 hamsters were also taken to the vet on Monday.

- (c) Use this information to complete the bar chart.

(1)

(Total 3 marks)

Q1



2. Here is a list of numbers.

- | | | | | | |
|---|---|---|---|---|---|
| 2 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|

From the list of numbers write down

(i) an odd number

.....

(ii) a square number

.....

(iii) a multiple of 3

.....

(iv) a factor of 10

.....

(Total 4 marks)

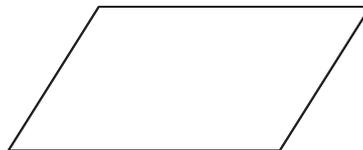
Q2

3. (a) Write down the mathematical name of each of these quadrilaterals.

(i)



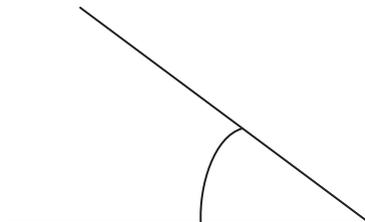
(ii)



(i) (ii)

(2)

(b) What type of angle is this?



.....

(1)

(Total 3 marks)

Q3



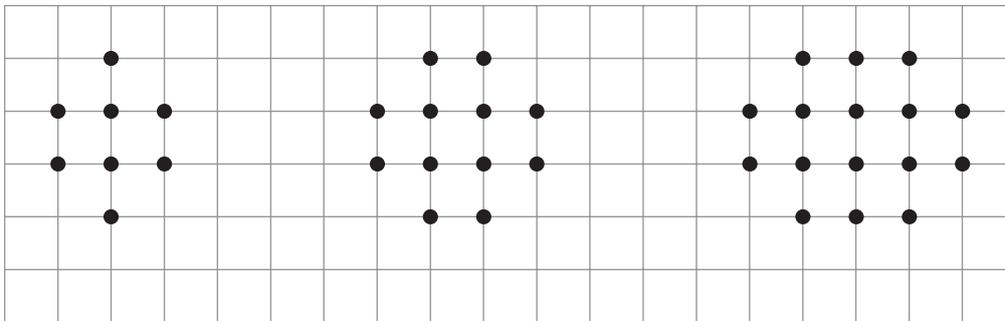
4. Work out $£1.70 \times 5$

£

Q4

(Total 1 mark)

5. Here are some patterns made with dots.

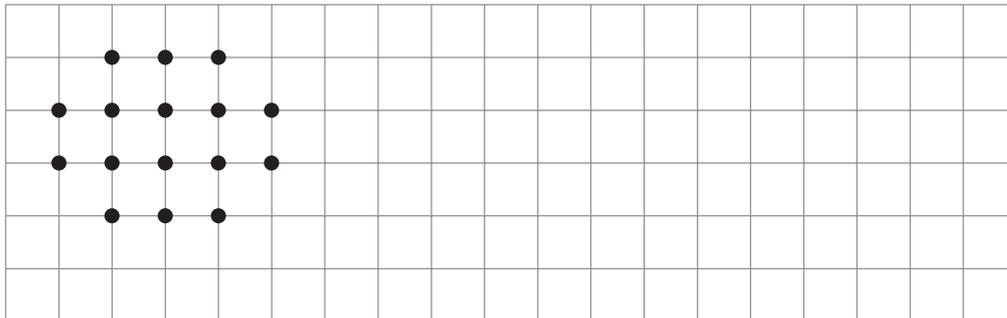


Pattern number 1

Pattern number 2

Pattern number 3

(a) In the space below, complete Pattern number 4



Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	8	12	16		

(2)

Q5

(Total 3 marks)



6. Here is part of a railway timetable.

Bristol Temple Meads	08 00	08 30	09 00
Bath	08 15	08 45	09 15
Chippenham	08 30	09 00	09 30
Swindon	08 50	09 20	09 50
Didcot	09 15	09 45	10 15
Reading	09 35	10 05	10 35
London Paddington	09 55	10 25	10 55

A train leaves from Bristol Temple Meads at 09 00

(a) At what time should the train arrive at Swindon?

.....
(1)

Jambaya gets to the station in Chippenham at 08 45
She waits for the next train to Didcot.

(b) (i) How long should she have to wait?

..... minutes

(ii) At what time should she arrive at Didcot?

.....
(2)

All the trains should take the same time to travel from Bath to Reading.

(c) How long, in minutes, should it take to travel from Bath to Reading?

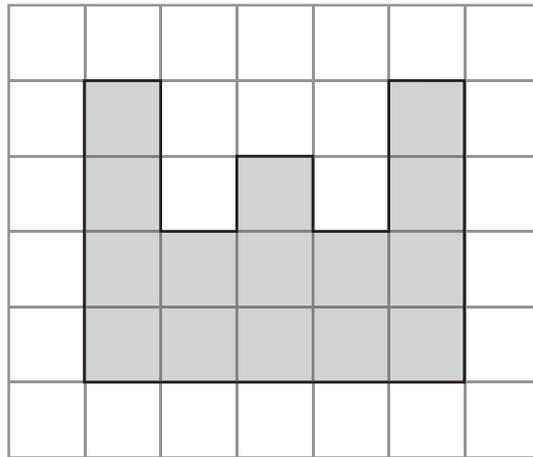
..... minutes
(2)

(Total 5 marks)

Q6



7. A shaded shape has been drawn on the centimetre grid.



(a) Find the perimeter of the shaded shape.

..... cm
(1)

(b) Find the area of the shaded shape.

..... cm²
(1)

Here is a solid prism made from centimetre cubes.

(c) Find the volume of this prism.

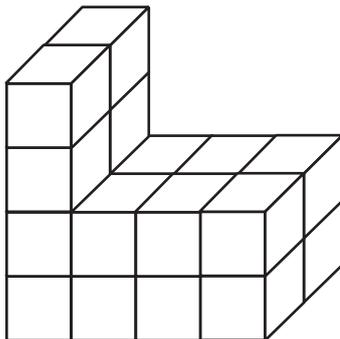
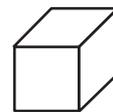


Diagram **NOT** accurately drawn



represents 1 cm³

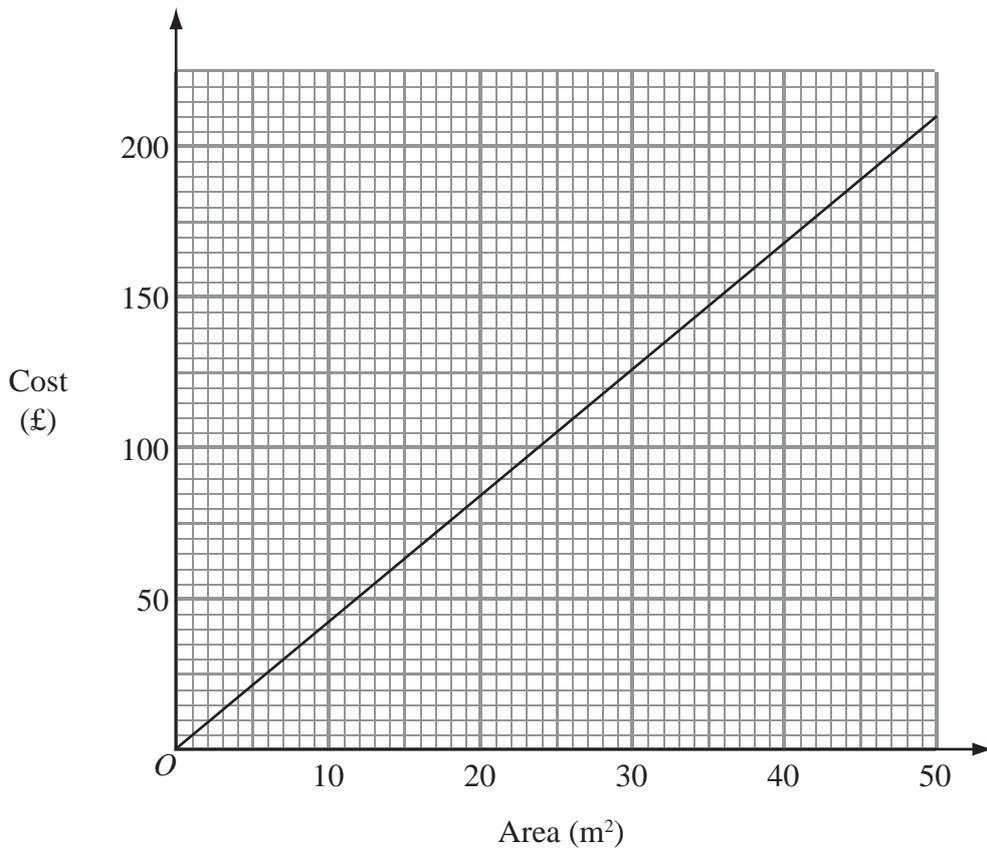
..... cm³
(2)

(Total 4 marks)

Q7



8. John cleans carpets of different areas.
He uses this graph to work out the cost of cleaning a carpet.



A carpet has an area of 30 m^2 .

- (a) Use the graph to find the cost of cleaning this carpet.

£
(1)

It costs £150 to clean another carpet.

- (b) Use the graph to find the area of this carpet.

..... m^2
(1)

A rectangular carpet has a length of 8.6 m.
It has a width of 5 m.

- (c) Work out the cost of cleaning this carpet.

£
(3)

(Total 5 marks)

Q8



9. The table shows the temperatures in three cities at noon one day.

Oslo	New York	Cape Town
-13°C	-5°C	9°C

(a) Work out the difference in temperature between Oslo and New York.

..... °C
(1)

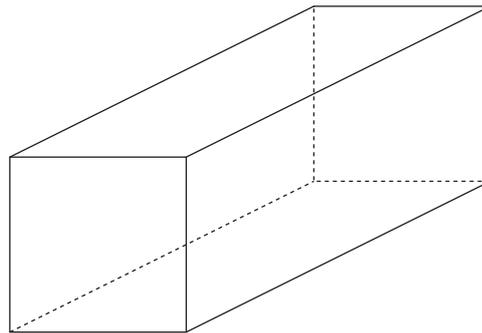
(b) Work out the difference in temperature between Cape Town and Oslo.

..... °C
(1)

(Total 2 marks)

Q9

10.



Here is a diagram of a cuboid.

Write down the number of

(i) faces
(ii) edges
(iii) vertices

(Total 3 marks)

Q10



11. (a) Solve $3x = 12$

$x = \dots\dots\dots$
(1)

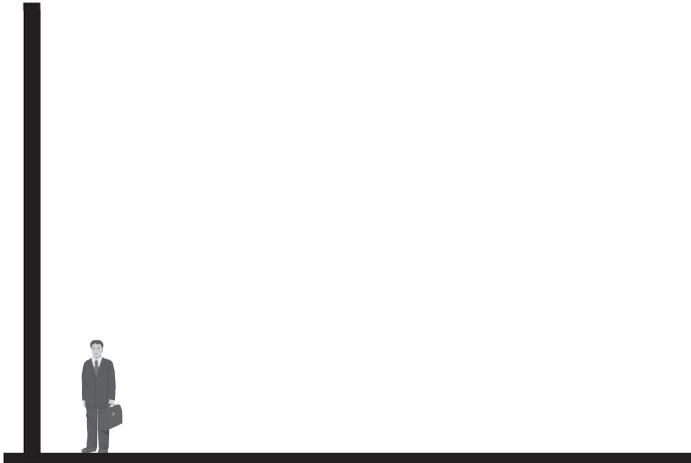
(b) Simplify $4 \times p \times q$

$\dots\dots\dots$
(1)

(Total 2 marks)

Q11

12.



The picture shows a man standing next to a flagpole.
The man is of normal height.
The man and the flagpole are drawn to the same scale.

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

$\dots\dots\dots$ m
(1)

(b) Work out an estimate for the height, in metres, of the flagpole.

$\dots\dots\dots$ m
(2)

(Total 3 marks)

Q12



13. You can use this rule to work out the total charge for hiring a cement mixer.

Total charge = £30 plus £7 for each hour of hire
--

On Monday, Sally hired a cement mixer for 4 hours.

(a) Work out Sally's total charge.

£
(2)

On Tuesday, Tom hired a cement mixer.
Tom's total charge was £51

(b) Work out for how many hours Tom hired the cement mixer.

..... hours
(3)

(Total 5 marks)

Q13



14.

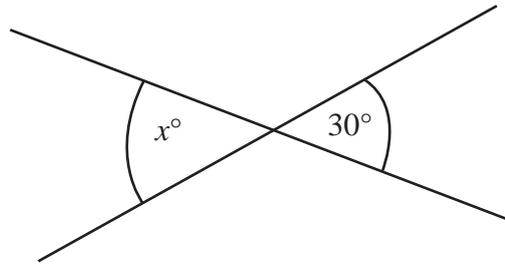


Diagram **NOT** accurately drawn

(a) (i) Write down the value of x .

$x = \dots\dots\dots$

(ii) Give a reason for your answer.

.....
.....

(2)

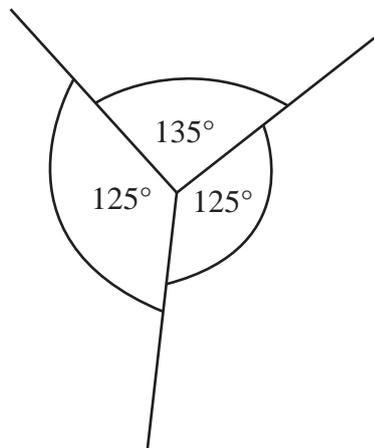


Diagram **NOT** accurately drawn

This diagram is **wrong**.

(b) Explain why.

.....
.....

(1)

(Total 3 marks)

Q14



15. (a) Work out the square of 3

.....
(1)

(b) Work out the value of 2^6

.....
(1)

(c) Write 80% as a fraction.
Give your answer in its simplest form.

.....
(2)

(d) Work out 10% of £320

£
(2)

(e) Write these numbers in order of size.
Start with the smallest number.

$\frac{2}{5}$ 45% 0.35 $\frac{3}{8}$

.....
(2)

(Total 8 marks)

Q15



16. The pie chart gives information about the mathematics exam grades of some students.

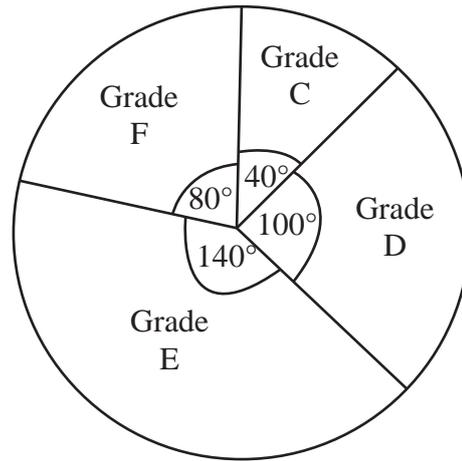


Diagram **NOT** accurately drawn

Mathematics exam grades

(a) What grade was the mode?

.....
(1)

(b) What fraction of the students got grade D?

.....
(1)

8 of the students got grade C.

(c) (i) How many of the students got grade F?

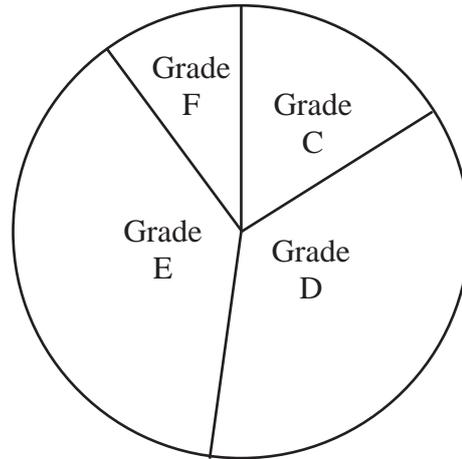
.....

(ii) How many students took the exam?

.....
(3)



This accurate pie chart gives information about the English exam grades for a different set of students.



English exam grades

Sean says “More students got a grade D in English than in mathematics.”

- (d) Sean could be **wrong**.
Explain why.

.....
.....

(1)

Q16

(Total 6 marks)



17.



Eiffel Tower

The table shows the cost of two different models of the Eiffel Tower.

Small	£2.40
Large	£4.50

Pierre buys

10 Small models,
and 5 Large models.

He pays with a £50 note.

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

£
(3)



A different model of the Eiffel Tower is made to a scale of 2 millimetres to 1 metre.

The width of the base of the real Eiffel Tower is 125 metres.

- (b) Work out the width of the base of the model.
Give your answer in millimetres.

..... mm
(2)

The height of the model is 648 millimetres.

- (c) Work out the height of the real Eiffel Tower.
Give your answer in metres.

..... m
(2)

(Total 7 marks)

Q17



18. There are 3 red pens, 4 blue pens and 5 black pens in a box. Sameena takes a pen, at random, from the box.

Write down the probability that she takes a black pen.

.....

(Total 2 marks)

Q18

19. A coin is made from copper and nickel. 84% of its weight is copper. 16% of its weight is nickel.

Find the ratio of the weight of copper to the weight of nickel. Give your ratio in its simplest form.

.....

(Total 2 marks)

Q19

20.

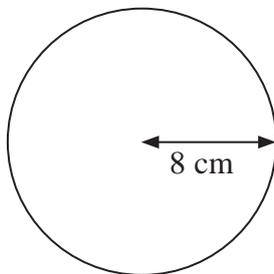


Diagram **NOT** accurately drawn

The radius of this circle is 8 cm.

Work out the circumference of the circle. Give your answer correct to 2 decimal places.

..... cm

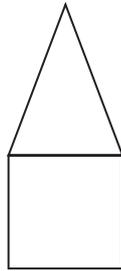
(Total 2 marks)

Q20

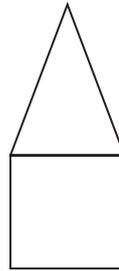


21. Here are the front elevation, side elevation and the plan of a 3-D shape.

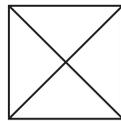
Front elevation



Side elevation



Plan



In the space below, draw a sketch of the 3-D shape.

(Total 2 marks)

Q21



22. Here are the first four terms of an arithmetic sequence.

5 8 11 14

Find an expression, in terms of n , for the n th term of the sequence.

.....

(Total 2 marks)

Q22

23. Use your calculator to work out

$$\frac{22.4 \times 14.5}{8.5 \times 3.2}$$

Write down all the figures on your calculator display.

.....

(Total 2 marks)

Q23

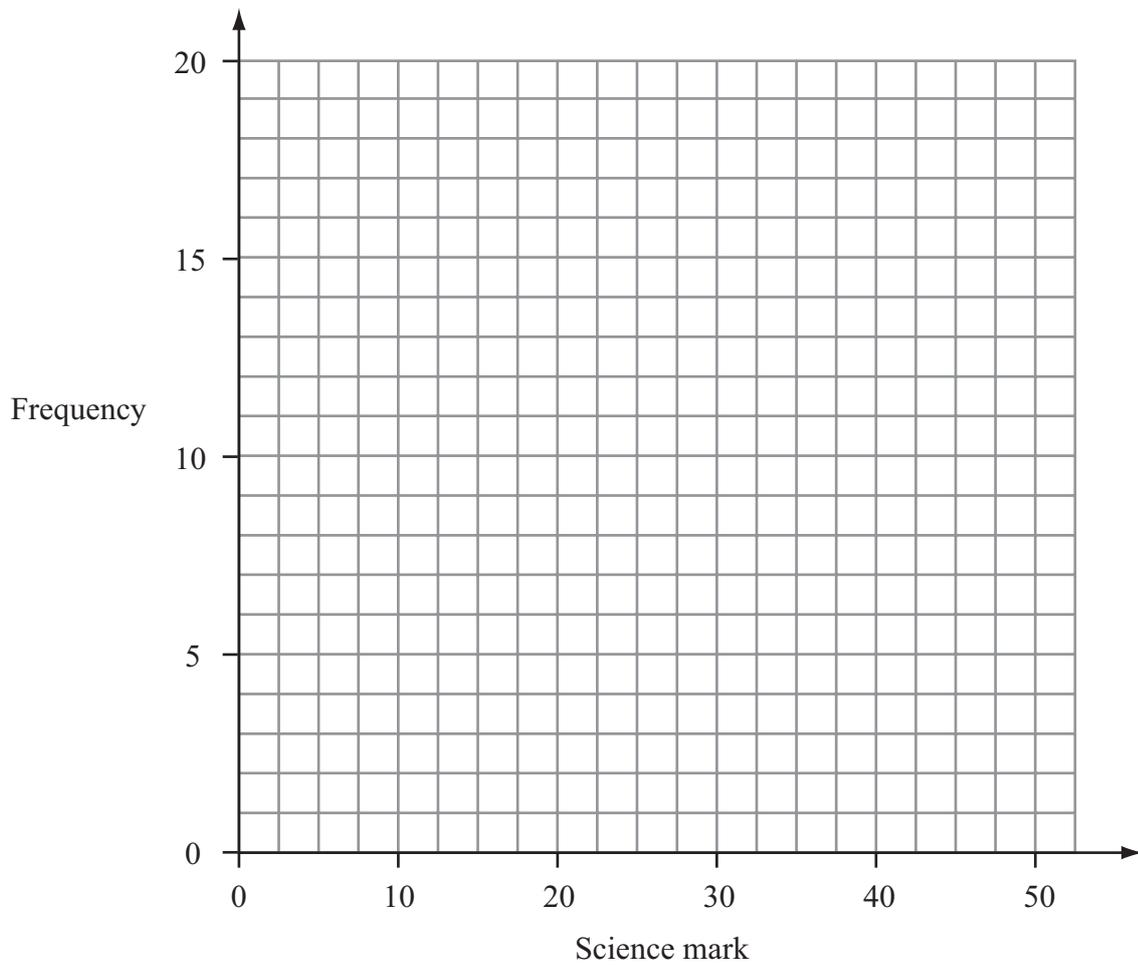


24. 60 students take a science test.
The test is marked out of 50.

This table shows information about the students' marks.

Science mark	0–10	11–20	21–30	31–40	41–50
Frequency	4	13	17	19	7

On the grid, draw a frequency polygon to show this information.



Q24

(Total 2 marks)



25. A garage sells British cars and foreign cars.
The ratio of the number of British cars sold to the number of foreign cars sold is 2 : 7

The garage sells 45 cars in one week.

(a) Work out the number of British cars the garage sold that week.

.....
(2)

A car tyre costs £80 plus VAT at $17\frac{1}{2}\%$.

(b) Work out the total cost of the tyre.

£
(3)

(Total 5 marks)

Q25



26. (a) Simplify $4a + 3c - 2a + c$

.....
(1)

(b) $S = \frac{1}{2}at^2$

Find the value of S when $t = 3$ and $a = \frac{1}{4}$

$S =$
(2)

(c) Factorise $x^2 - 5x$

.....
(2)

(d) Solve $7x - 19 = 3(x - 3)$

$x =$
(3)

(Total 8 marks)

Q26



27. Express 252 as a product of its prime factors.

.....

(Total 3 marks)

Q27

28.

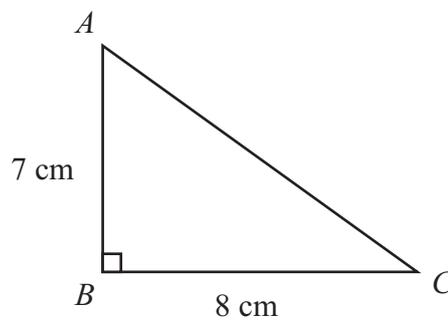


Diagram NOT accurately drawn

ABC is a right-angled triangle.

$AB = 7$ cm,

$BC = 8$ cm.

Work out the length of AC .

Give your answer correct to 2 decimal places.

..... cm

(Total 3 marks)

Q28

TOTAL FOR PAPER: 100 MARKS

END

