

Centre No.						Paper Reference					Surname	Initial(s)			
Candidate No.						1	3	8	0	H	/	4	H	Signature	

Paper Reference(s)

1380H/4H

Edexcel GCSE

Mathematics (Linear) – 1380

Paper 4 (Calculator)

Higher Tier

Mock Paper

Time: 1 hour 45 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 24 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.

This publication may be reproduced only in accordance with Edexcel Limited copyright policy. ©2007 Edexcel Limited.

Printer's Log. No.
N33850A

W850/R1380H/57570 2/2/2/



Turn over

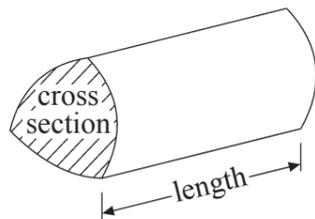
edexcel 
advancing learning, changing lives

GCSE Mathematics (Linear) 2540

Formulae: Higher Tier

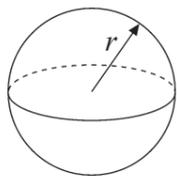
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section \times length



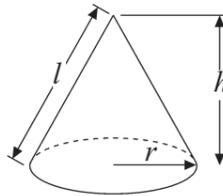
Volume of sphere = $\frac{4}{3}\pi r^3$

Surface area of sphere = $4\pi r^2$

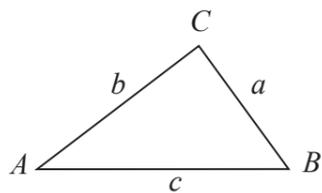


Volume of cone = $\frac{1}{3}\pi r^2 h$

Curved surface area of cone = $\pi r l$



In any triangle ABC



The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$

where $a \neq 0$, are given by

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle = $\frac{1}{2} ab \sin C$



Leave
blank

Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Jim and Abbi share some money in the ratio 1:4

(a) Find the percentage of the money that is Jim's share.

..... %
(2)

Imran and Helen share £180 in the ratio 2:3

(b) Work out how much money Helen will get.

£
(2)

(Total 4 marks)

Q1

3

Turn over



Leave
blank

2. In a box there are only blue counters, green counters, yellow counters and white counters.
Beccy is going to take at random a counter from the box.

The table gives information about the probability she will take a blue counter or a green counter or a yellow counter from the box.

Counter	Blue	Green	Yellow	White
Probability	0.1	0.35	0.36	

- (a) Find the probability that Beccy will take a white counter from the box.

.....
(2)

- (b) Find the probability that Beccy will take either a green counter or a yellow counter from the box.

.....
(2)

(Total 4 marks)

Q2





<p>3. The total cost of 3kg of apples and 2 kg of lemons is £5.76</p> <p>4kg of apples cost £5.12</p> <p>Work out the cost of 1 kg of lemons.</p> <p>.....</p> <p>(Total 3 marks)</p>	Leave blank
	Q3 <input type="text"/>

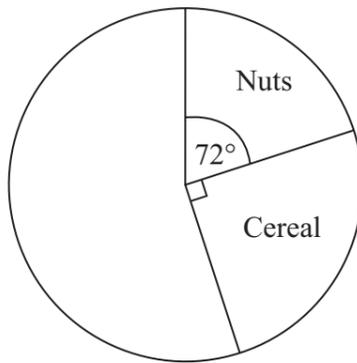


N 3 3 8 5 0 A 0 5 2 4



Leave blank

4. Jane makes her own muesli.
The ingredients of Jane's muesli are nuts, cereal, fruit and seeds.
The pie chart gives some information about the proportion by weight of ingredients in her muesli.



- (a) Calculate the weight of nuts in 400 grams of Jane's muesli.

..... grams
(2)

30% of the weight of Jane's muesli is fruit.

- (b) Complete the pie chart.

(2) Q4

(Total 4 marks)



5. (a) Solve $5x + 2 = x + 12$

$$x = \dots\dots\dots (2)$$

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

$$y = \dots\dots\dots (2)$$

(Total 4 marks)

Leave
blank

Q5

7

Turn over



N 3 3 8 5 0 A 0 7 2 4

Leave
blank

6.

$$y = 3p - 4q$$

$$p = -12, q = -3$$

(a) Find the value of y .

.....
(2)

(b) Rearrange $y = 3p - 4q$
to make p the subject.

$p =$
(2)

(Total 4 marks)

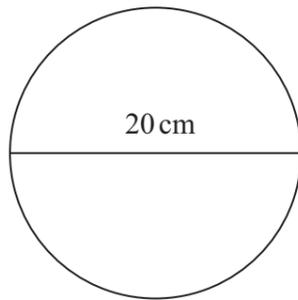
Q6



Leave
blank

7.

Diagram NOT
accurately drawn



A circle has a diameter of 20 cm.

- (a) Work out the circumference of the circle.
Give your answer to 3 significant figures.

..... cm
(2)

A circular wheel has a diameter of 20 cm.
The wheel rolls without slipping for 30 m.

- (b) Calculate the number of times the wheel turns.
Give your answer to the nearest whole number.

.....
(2)

(Total 4 marks)

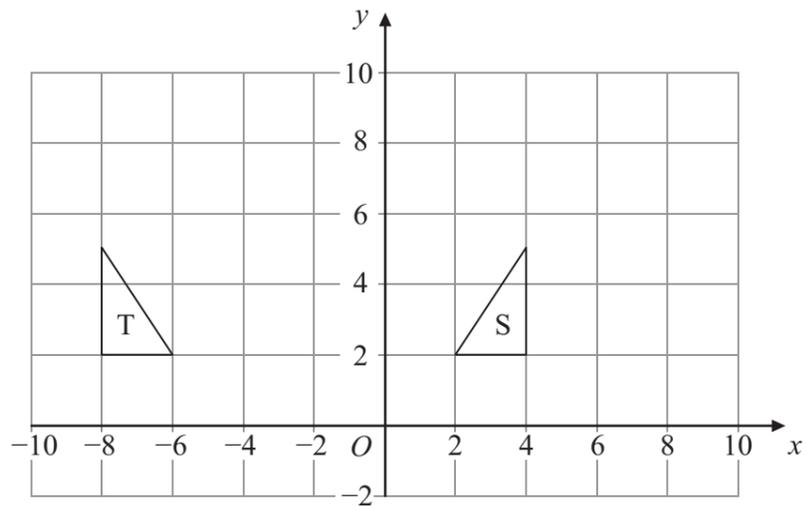
Q7

9

Turn over



8.



(a) Describe fully the single transformation that maps shape S onto shape T.

.....

(2)

(b) Enlarge shape S with scale factor 2 and centre of enlargement (0, 2).
 Label this shape R.

(2)

Q8

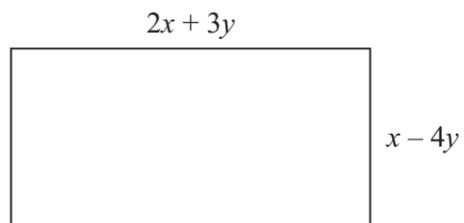
(Total 4 marks)



Leave
blank

9.

Diagram **NOT**
accurately drawn



The diagram shows a rectangle.
All the measurements are in centimetres.

The perimeter of the rectangle is P centimetres.

(a) Express P in terms of x and y . Give your answer in its simplest form.

$$P = \dots\dots\dots$$

(2)

The perimeter, P , of the rectangle, is 56 cm.

(b) Find the value of x when $y = 2$

$$x = \dots\dots\dots$$

(2)

(Total 4 marks)

Q9



10. Marcus invests £5000 in an account paying 4.3% compound interest each year.
Calculate the amount in his account after 2 years.

Leave
blank

£

Q10

(Total 3 marks)

11.

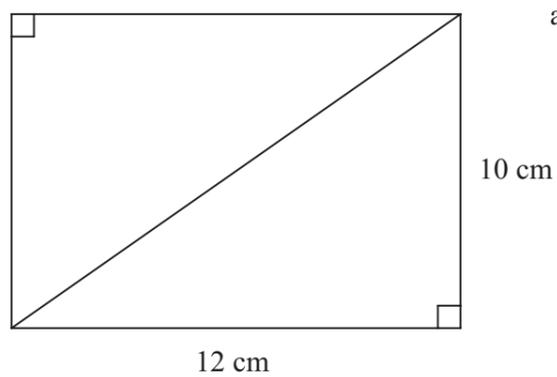


Diagram **NOT**
accurately drawn

The diagram shows a rectangular framework made of wire.

Work out the total length of wire in the framework.
Give your answer to 3 significant figures.

..... cm

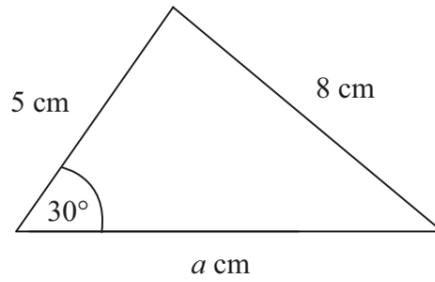
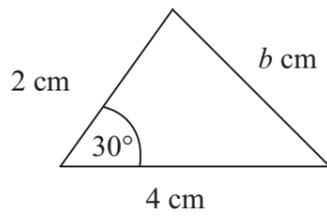
Q11

(Total 4 marks)



12.

Diagram **NOT** accurately drawn



The diagram shows two triangles.
The triangles are similar.

(a) Calculate the value of a .

..... cm
(2)

(b) Calculate the value of b .

..... cm
(2)

(Total 4 marks)

Q12



13. A salesman gets a basic wage of £80 per week plus a commission of 30% of the sales he makes in that week.

In one week his total wage was £800

Work out the value of the sales he made that week.

Leave
blank

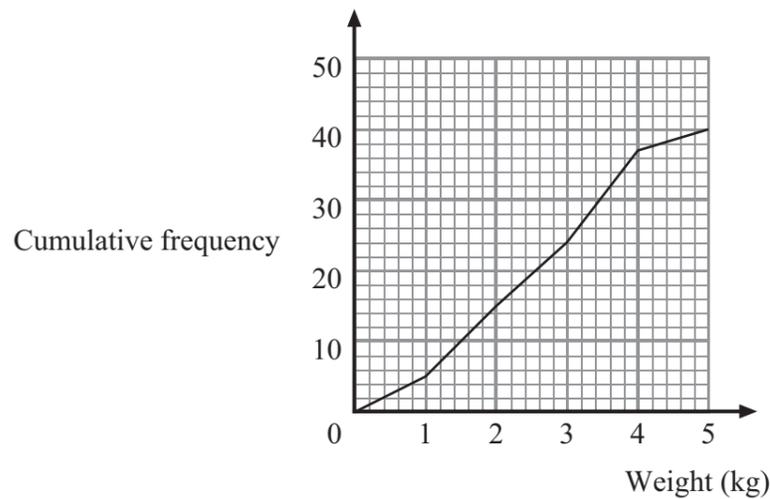
£

Q13

(Total 3 marks)



14. The cumulative frequency graph gives information about the weights of 40 fallen branches from trees in a wood.



The cumulative frequency graph gives information about the weights of 40 fallen branches from trees in a wood.

(a) Estimate the median weight.

..... kg
(1)

(b) Estimate the interquartile range of the weights.

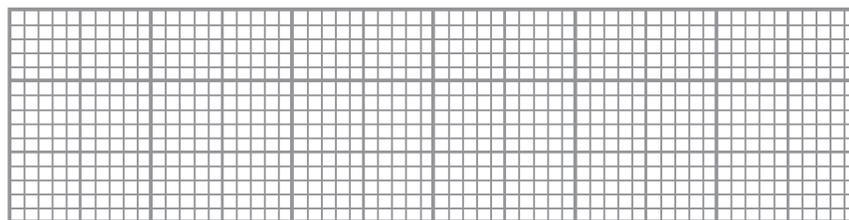
..... kg
(2)

The interquartile range is a better measure of the spread of a distribution than the range.

(c) Explain why.

.....
(1)

(d) The minimum weight is 0.4 kg and the maximum weight is 5kg
Draw a box plot to show this information.



(3) Q14

(Total 7 marks)



15. Solve

$$\begin{aligned}4x + 4y &= 6 \\ x - 2y &= 3\end{aligned}$$

$$x = \dots\dots\dots y = \dots\dots\dots$$

(Total 3 marks)

Leave blank

Q15

16. Simplify

(i) $a^4 \times a^7$

.....
(1)

(ii) $2b^3 \times 4b^2$

.....
(2)

(iii) $4p^2q^6 \div 2pq^4$

.....
(2)

(Total 5 marks)

Q16



17. The mass of the Earth is 5.9742×10^{24} kg.

The mass of the Sun is 333 000 times the mass of the Earth.

Work out the mass of the Sun.

Give your answer in standard form correct to 3 significant figures.

..... kg

(Total 2 marks)

Leave
blank

Q17

17

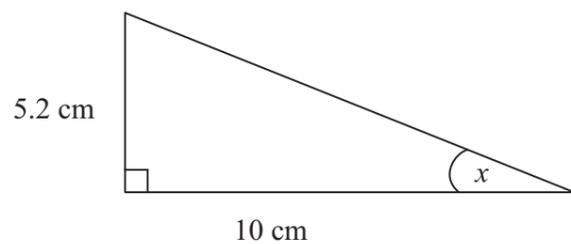
Turn over



18.

Leave
blank

Diagram **NOT**
accurately drawn



Calculate the size of the angle x .
Give your answer to 3 significant figures.

..... °

Q18

(Total 3 marks)



Leave
blank

19. The mass, M kg, of an iron sphere is proportional to the cube of its radius, R cm.

When $R = 5$, $M = 3750$

(a) Find a formula for M in terms of R .

$M = \dots\dots\dots$
(3)

$R = 6$

(b) Find the value of M .

$M = \dots\dots\dots$
(2)

(Total 5 marks)

Q19



Leave
blank

20. A sports centre has the following membership groups.

Membership Group	Number of members
Male Adults	310
Female Adults	240
Male children	125
Female children	65

The sports centre manager wishes to take a sample, stratified by membership group, of the members of the sports centre.

The size of the sample will be 50

Work out the number of male adults that should be in the sample.

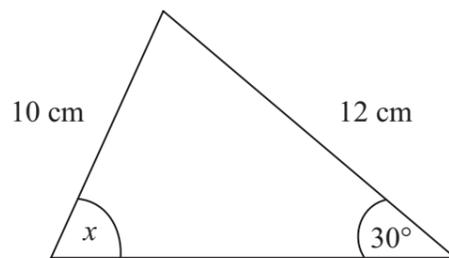
.....
Q20

(Total 4 marks)



21.

Diagram **NOT** accurately drawn



- (a) Work out the size of the angle marked x .
Give your answer correct to one decimal place.

.....
(3)

- (b) Calculate the area of the triangle.
Give your answer correct to 2 significant figures.

..... cm^2
(3)

(Total 6 marks)

Q21



Leave blank

22.

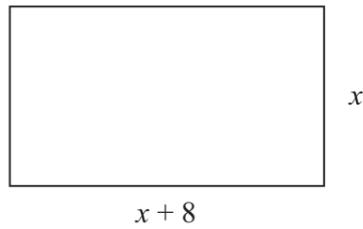


Diagram **NOT** accurately drawn

The diagram shows a rectangle. All the measurements are in centimetres.

(a) Write down an expression, in terms of x , for the area, in cm^2 , of the rectangle.

..... cm^2
(1)

The area of the rectangle is 40 cm^2 .

(b) Show that $x^2 + 8x - 40 = 0$

(2)

(c) Solve the equation $x^2 + 8x - 40 = 0$
Give your answers correct to 3 significant figures.

.....
(3)

(d) Find the length of the longest side of the rectangle.
Give your answer correct to 3 significant figures.

..... cm
(1)

Q22

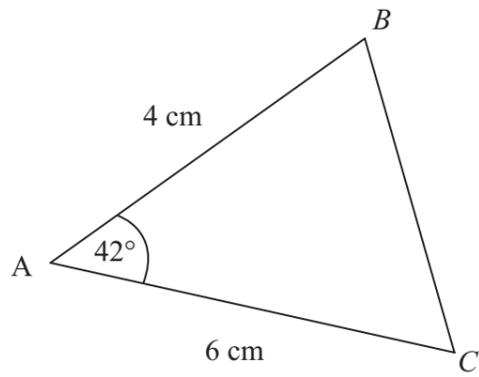
(Total 7 marks)



23.

Leave
blank

Diagram **NOT**
accurately drawn



Work out the length of BC .
Give your answer correct to 3 significant figures.

..... cm

Q23

(Total 3 marks)



Leave
blank

24. (a) Expand $(x + y)^2$

.....
(1)

The first four terms of an arithmetic sequence are

1 4 7 10

(b) Find an expression, in terms of n , for the n th term of the arithmetic sequence.

.....
(2)

Sophie says that when she squares any term of the arithmetic sequence, she gets an answer which is also a term of the same arithmetic sequence.

(c) Use your answers to parts (a) and (b) to show that Sophie is correct.

(3)

Q24

(Total 6 marks)

TOTAL FOR PAPER: 100 MARKS

END

