OCR
RECOGNISING ACHIEVEMENT

SPECIMEN

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS B
Foundation Tier

F **B292/B**

TERMINAL PAPER – SECTION B

Specimen

Candidates answer on the question paper.

Time: 1 hour

Additional Materials:
Scientific calculator
Geometric instruments
Tracing paper (optional)

Candidate Name

Centre Number | | | | | |

Candidate Number | | | | |

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Show all your working. Marks may be given for working which shows that you know how to solve the problem, even if you get the answer wrong.
- Do **not** write in the bar code.
- Do **not** write outside the box bordering each page.
- WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

- You are expected to use a calculator in Section B of this paper.
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks in this section is 50.
- This section starts at question 11.
- Unless otherwise instructed take π to be 3.142 or use the π button on your calculator.

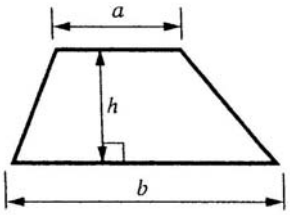
For Examiner's Use	
Section B	

This document consists of **16** printed pages.

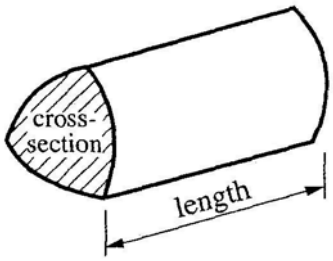
   [Turn Over

FORMULAE SHEET

Area of trapezium = $\frac{1}{2}(a+b)\,h$



Volume of prism = (area of cross-section) × length



11 **(a)** Write the following in figures.

(i) 30 million

(a)(i).....[1]

(ii) twenty thousand and sixty-five

.

(ii).....[1]

(b) At a recent football league match the attendance was given as 48264.

(i) Write down the place value of the 8 in 48264.

(b)(i).....[1]

(ii) Write 48264 correct to the nearest 100.

.

(ii).....[1]

(iii) Write 48264 correct to the nearest 10.

.

(iii).....[1]

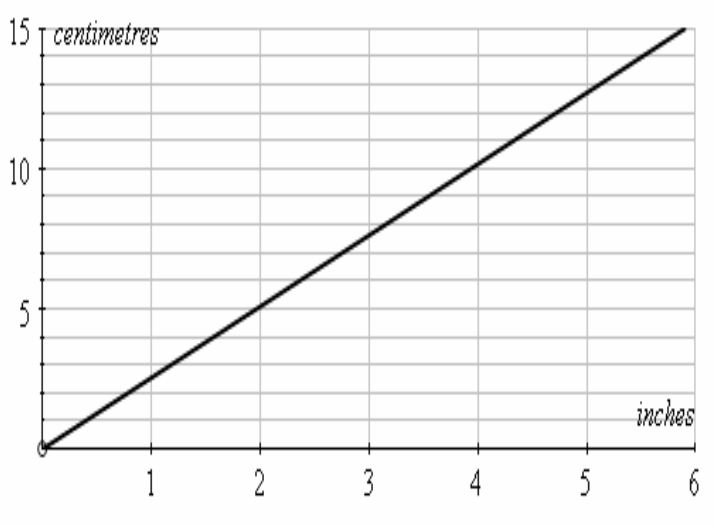
[Turn Over

12 **(a)** Use $p = 8$ and $q = 3$ to work out the value of

$$2p + 5q.$$

(a).....[2]

(b) This graph shows the conversion between centimetres and inches.



[3]

What is

(i) 13 cm in inches,

(b)(i) **……..** inches [1]

(ii) 3 inches in cm?

(ii) **……...……** cm [1]

13 **(a)** Ann bought this DVD player in the sale.

Work out 15% of £37.80.

(a)£.....[2]

(b) Miriam put a first class stamp of 32p onto a large letter. At the Post Office she had to put an extra set of stamps worth 12p to cover the cost of a large letter.

(i) What was the cost of posting a large letter first class?

(b) (i) …… p [1]

(ii) The Post Office had only stamps worth 1p, 2p, 4p and 8p.

Write down three **different** ways in which the extra postage could be paid using these stamps.

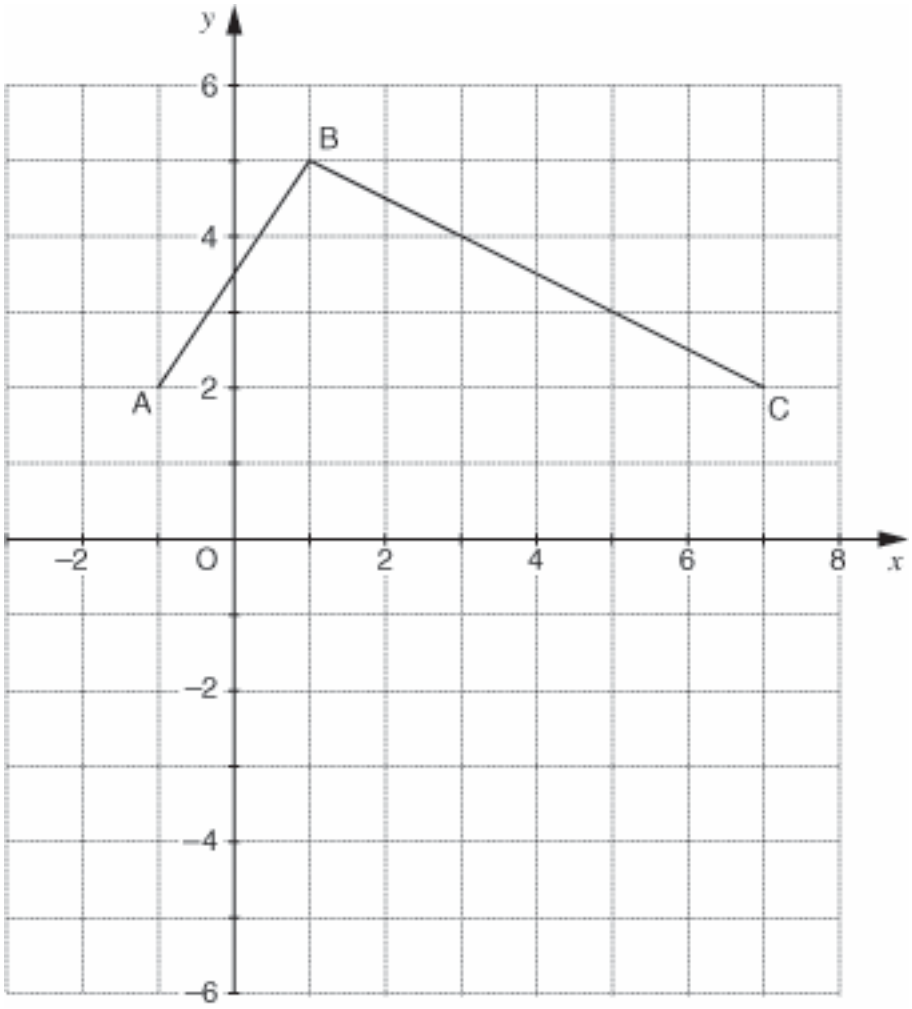
……

……

……. [3]

[Turn Over

14



A, B and C are 3 vertices of a kite.

(a) Find the mid-point of AC. Label it M. [1]

(b) Write down the coordinates of M.

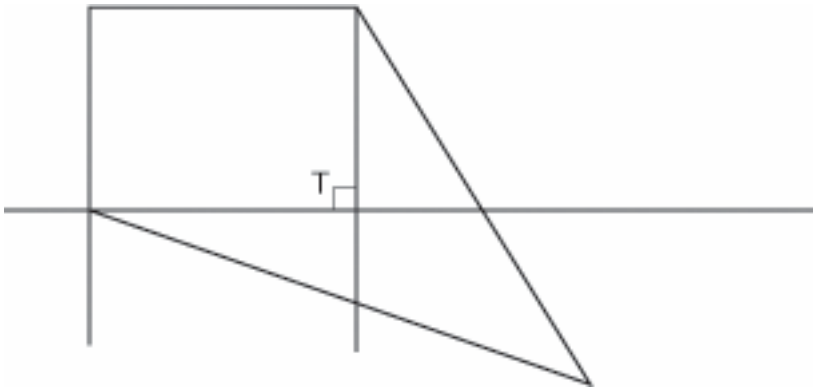
(b) (…..… , ……...) [1]

(c) Plot the fourth vertex of the kite. Label it D. [1]

(d) Write down the coordinates of D.

(d) (…..… , ……...)[1]

15 **(a)** On the diagram a right angle is labelled T.

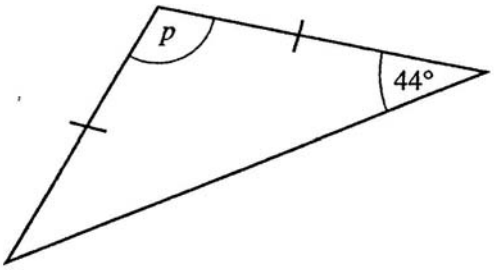


On this diagram, mark and label

(i) an acute angle A, [1]

(ii) an obtuse angle, O. [1]

(b) Work out angle *p* in this isosceles triangle.
Give your reasons.

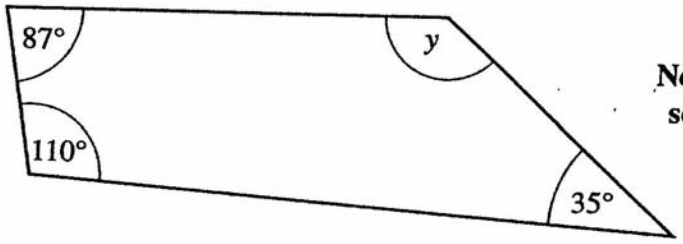


Not to scale

p =..... ° because .....

.....[3]

(c) Work out angle *y*.
Give your reason.



Not to scale

y =..... ° because .....

.....[2]

[Turn Over

16 Sanjit threw a six-sided die numbered one to six 200 times and recorded the results on a spreadsheet.

He calculated the relative frequency of the number of sixes thrown.
The table shows his results.

Total number of throws	10	20	100	150	200
Total number of sixes	0	1	33	48	69
Relative frequency of sixes	0	0.05	0.33		0.345

(a) Complete the relative frequency row in the table.
Show how you obtained your answer. [2]

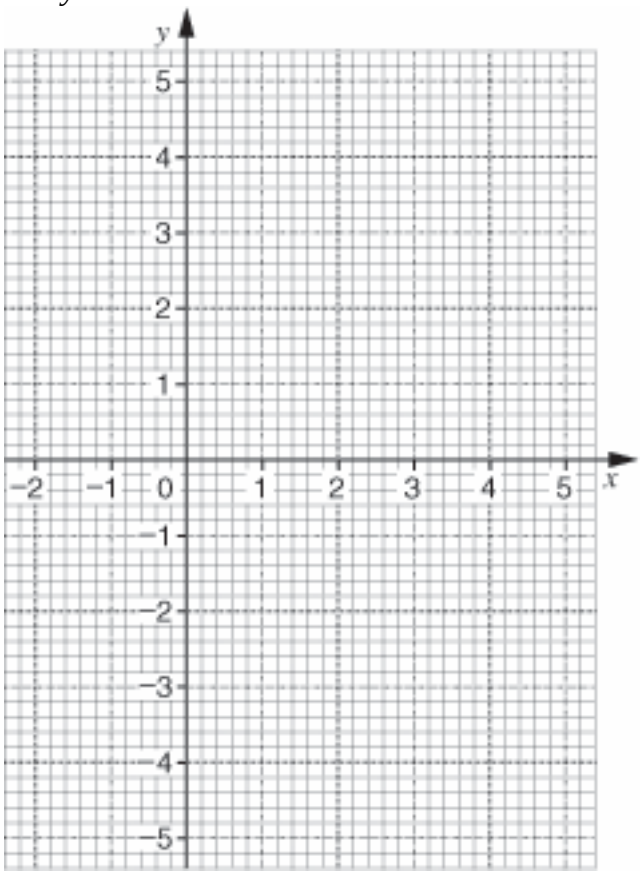
Sanjit then used the computer to draw this relative frequency graph of the number of sixes he threw.

(b) How does this graph indicate that Sanjit's die is biased?

……

…… [2]

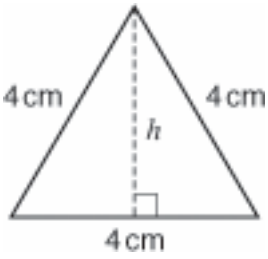
17 On the grid, draw the line $y = 2x - 1$.



[3]

[Turn Over

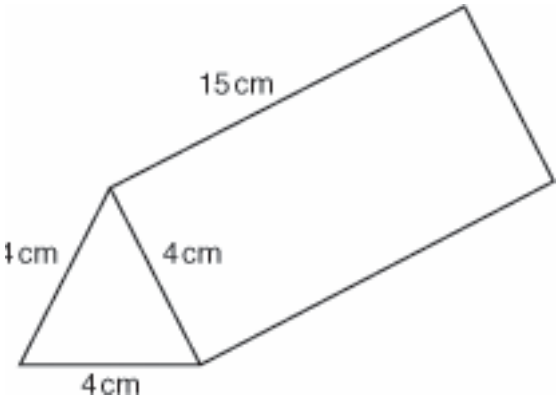
18 **(a)** Show that the height of an equilateral triangle with sides of length 4 cm is 3.5 cm, correct to 1 decimal place. [3]



(b) The end of the prism shown is an equilateral triangle of side 4 cm.
The prism is 15 cm long.

Calculate the volume of the prism.

Give your answer to an appropriate degree of accuracy.



(b)…….…… cm^3 [3]

19 Mrs Dent wants her garden to be improved.
The cost of the design for the garden is £700.
The materials and plants cost £1200.
The cost of labour is £90 per day.

(a) Write a formula for the total cost, £C, of her garden when n days labour are needed.

(a) .....[2]

(b) The total cost is £2395.

Write an equation and solve it to find how many days labour were needed.

(b) .....[3]

[Turn Over

20 **(a)** Sarah counted the numbers of items in ten school bags belonging to a random selection of students in year 11 at her school.

Here are her results.

27 13 17 22 41 15 19 25 14 18

Work out

(i) the range,

(a)(i) ……..[1]

(ii) the mean number of items.

(ii) .....[3]

(b) Greg carried out the same survey, but on a random selection of students from year 13.
The results of his survey gave a mean number of items of 19.9 with a range of 8.

Compare the two sets of results of the survey.

……..

……..

…… [2]

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

MATHEMATICS B B292/B

Foundation Tier

TERMINAL PAPER 1 – SECTION B

Specimen Mark Scheme

The maximum mark for this section is 50.

Section B					
11	**(a)(i)**	30 000 000	**B1**		
	(ii)	20 065	**B1**		
	(b)(i)	8 thousand or thousands	**B1**		
	(ii)	48300	**B1**		
	(iii)	48260	**B1**	**5**	
12	**(a)**	16+15 = 31	**M1** **A1**		
	(b)(i)	5 - 5.2 inches	**B1**		
	(ii)	7.5 - 8 cm	**B1**	**4**	
13	**(a)**	37.50×0.15 = £5.67	**M1** **A1**		
	(b)(i)	44p	**B1**		
	(ii)	Any three valid combinations	**B3**	**6**	1 mark for each valid combination, max 3. Ignore errors/duplicates.
14	**(a)**	M correctly positioned.	**B1**		
	(b)	(3, 2)	**B1**		
	(c)	D correctly positioned.	**B1**		
	(d)	(1, −1)	**B1**	**4**	
15	**(a)(i)**	A correct angle (8 possibilities)	**B1**		
	(ii)	A correct angle (4 possibilities but also allow acute + 90^0)	**B1**		
	(b)	$p = 92$ Because both angles are 44^0 And the angle sum of triangle = 180^0	**B1** **B1** **B1**		
	(c)	$y = 128^0$ Because sum of angles in quad is 360^0	**B1** **B1**	**7**	

16	**(a)**	$\frac{48}{150}$ $= 0.32$	**M1** **A1**		
	(b)	Because the relative frequency seems to be settling at around 0.35 And it should be $\frac{1}{6} = 0.17$	**B1** **B1**	**4**	
17		Straight line with +ve gradient Gradient = 2 Through (0, −1)	**B1** **B1** **B1**	**3**	
18	**(a)**	$h = \sqrt{4^2 - 2^2}$ $= \sqrt{12} = 3.5$	**M1** **B1** **A1**		Pythagoras Sight of 2
	(b)	$V = \frac{1}{2} \times 2 \times 3.5 \times 15$ $= 105$	**M1** **M1** **A1**	**6**	Vol of triangle Vol of prism
19	**(a)**	$C = 700 + 1200 + 90n$	**M1** **A1**		
	(b)	$2395 = 1900 + 90n$ $\Rightarrow 90n = 2395 - 1900 = 495$ $\Rightarrow n = 5.5$	**M1** **A1** **A1**	**5**	
20	**(a)(i)**	41 - 13 = 28	**B1**		
	(ii)	Sum = 211 Mean = 21.1	**M1** **M1** **A1**		Add Divide by 10
	(b)	Fewer items on average More consistent (i.e. smaller range)	**B1** **B1**	**6**	

Section B Total 50

Assessment Objectives Grid

Question	AO2	AO3	AO4	Total
11	5			**5**
12	4			**4**
13	6			**6**
14		4		**4**
15		7		**7**
16			4	**4**
17	3			**3**
18		6		**6**
19	5			**5**
20			6	**6**
Totals	**23**	**17**	**10**	**50**