

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4352/01

MATHEMATICS (UNITISED SCHEME)

UNIT 2: Non-Calculator Mathematics

FOUNDATION TIER

A.M. FRIDAY, 8 November 2013

1 hour 15 minutes

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

ADDITIONAL MATERIALS

A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3.14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

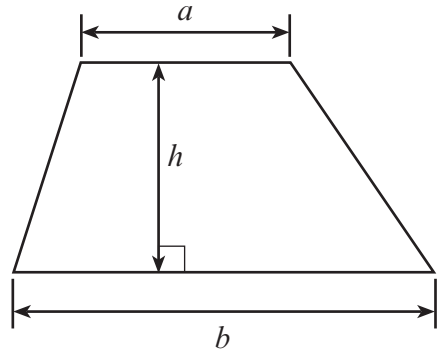
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **9**.

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	9	
2.	4	
3.	2	
4.	4	
5.	3	
6.	4	
7.	2	
8.	3	
9.	7	
10.	3	
11.	6	
12.	3	
13.	4	
14.	3	
15.	8	
Total	65	

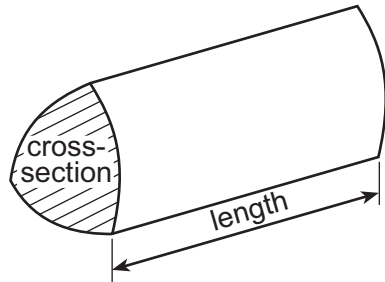
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Formula List

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



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



1. (a) The distance of the Earth from the Moon is 384 400 km. [1]
Write this number in words.

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- (b) Find the sum of 586 and 374. [1]

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- (c) Find the difference between 785 and 268. [1]

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- (d) From this list of numbers

8 12 29 30 36 45 51 56

write down

- (i) a prime number, [1]

- (ii) a square number, [1]

- (iii) a multiple of 7, [1]

- (iv) the number which is $\frac{1}{6}$ of 48. [1]

- (e) In Owen's class, there are three times as many boys as girls. [2]
There are 18 boys in the class.
How many pupils are in the class altogether?

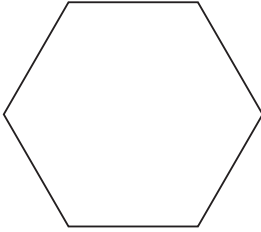
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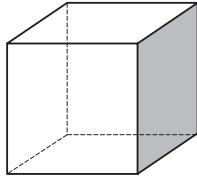
2. From the list below, choose the correct name of each shape.
Write each answer below the shape.

[4]

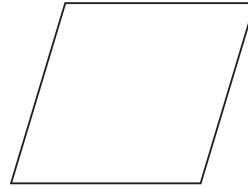
cube pentagon trapezium pyramid rhombus cylinder hexagon



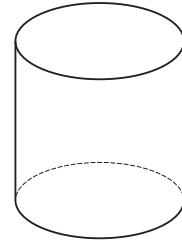
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3. (a) This year, Christmas Day is on a Wednesday.

Circle the best expression from those given below to describe the chance that
Christmas Eve is on a Sunday this year.

[1]

impossible unlikely an even chance likely certain

- (b) Amy has 6 pens and 2 pencils in her pencil case.

Amy chooses one of these 8 objects at random from her pencil case.

Circle the best expression from those given below to describe the chance that the object
chosen is a pen.

[1]

impossible unlikely an even chance likely certain

4. (a) Describe **in words** a rule for continuing **each** of the following sequences.

(i) 4, 12, 36, 108, [1]

Rule:

.....

(ii) 63, 55, 47, 39, [1]

Rule:

.....

(b) In a sale, the price of every mp3 player in a shop is reduced by 20%.

The original price of an mp3 player was £60.

By how much is the price reduced in the sale? [2]

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5. Peter buys a bag of 21 sweets.

In the bag there are 13 red sweets, 6 green sweets and 2 yellow sweets.

Peter likes red sweets and eats 3 of them.

He then asks his sister to choose one sweet at random from the bag.

(a) What is the probability that she chooses a red sweet? [2]

.....
.....

(b) What is the probability that she chooses an orange sweet? [1]

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.....

6. (a) Simplify $8a + 4b + 5a - 6b$.

[2]

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(b) (i) A book costs £7.

[1]

Write down the cost of n books.

.....

(ii) The length of a bus is x metres.

A car is 4 metres shorter than the bus.

Write down the length of the car in terms of x .

[1]

.....

7.



- (a) Faizan has a new motorbike. The diameter of each wheel is 0.78 m.

Write down this diameter in centimetres.

[1]

- (b) The motorbike has an engine capacity of 585 cm^3 .

Write down the engine's capacity in litres.

[1]

8. Rhian earns £20 every week from her Saturday job.

She saves $\frac{2}{5}$ of her wages and spends the rest.

How much does she spend altogether in 9 weeks?

[3]

9. *You will be assessed on the quality of your written communication in this question.*

Jac wants to buy some printer cartridges.

At his local computer shop, these cartridges cost £7 each.

The shop has two separate offers available.

Offer A: Buy 3 for the price of 2
Offer B: £10 off when you spend £25 or more

What is the smallest number of cartridges that Jac can buy that makes Offer B better value than Offer A?

You must show **all** your working to support your conclusion.

[7]

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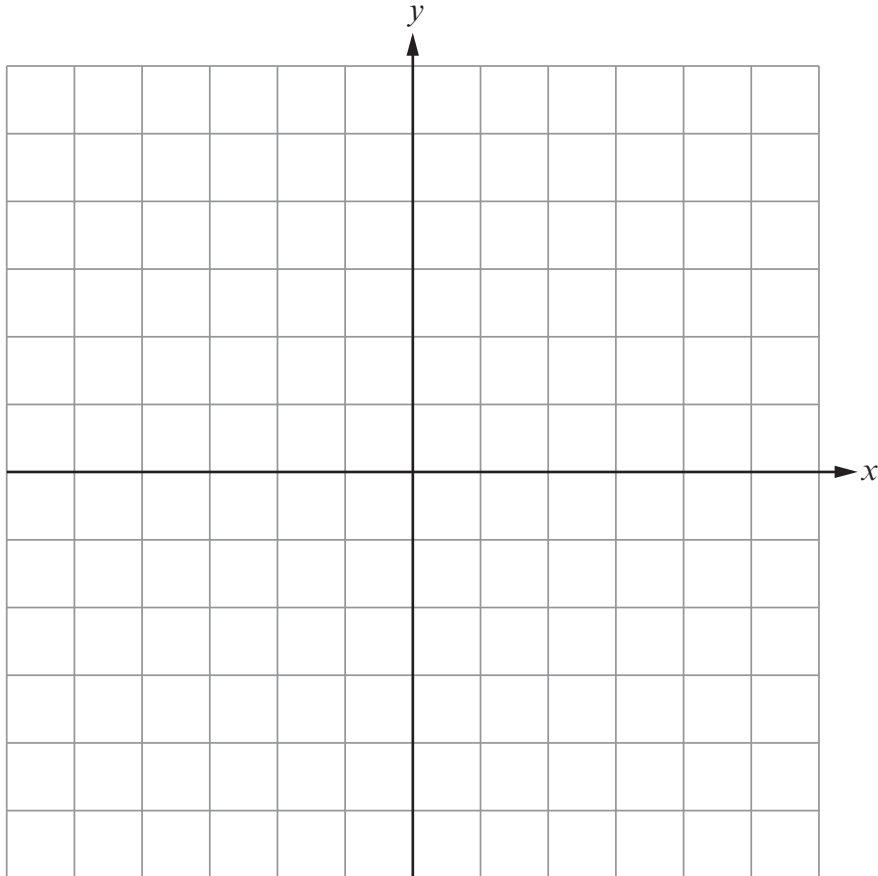
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10. Joe wants to draw a parallelogram on the grid below.

Three of the vertices are at the points $(1, -5)$, $(5, 2)$ and $(0, 4)$.

Write down one possible pair of coordinates for the fourth vertex.

[3]



Coordinates of the fourth vertex are (..... ,)

11. Catrin is playing a game using two boxes with cards in them.

The first box has three cards numbered 4, 7 and 9.

The second box has three cards numbered 3, 6 and 8.

Catrin chooses a card at random from the first box and then a card at random from the second box.

The score for the game is found by doubling the number on the card from the first box and adding that answer to the number on the card from the second box.

- (a) Complete the following table showing all the possible scores. [2]

		Second box		
		3	6	8
First box	4	11		
	7			
	9			26

- (b) (i) Find the probability that the score is more than 20. [2]

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- (ii) Catrin wins the game if her score is more than 20.

How many times will Catrin be expected to win if she plays the game 54 times?

[2]

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12.

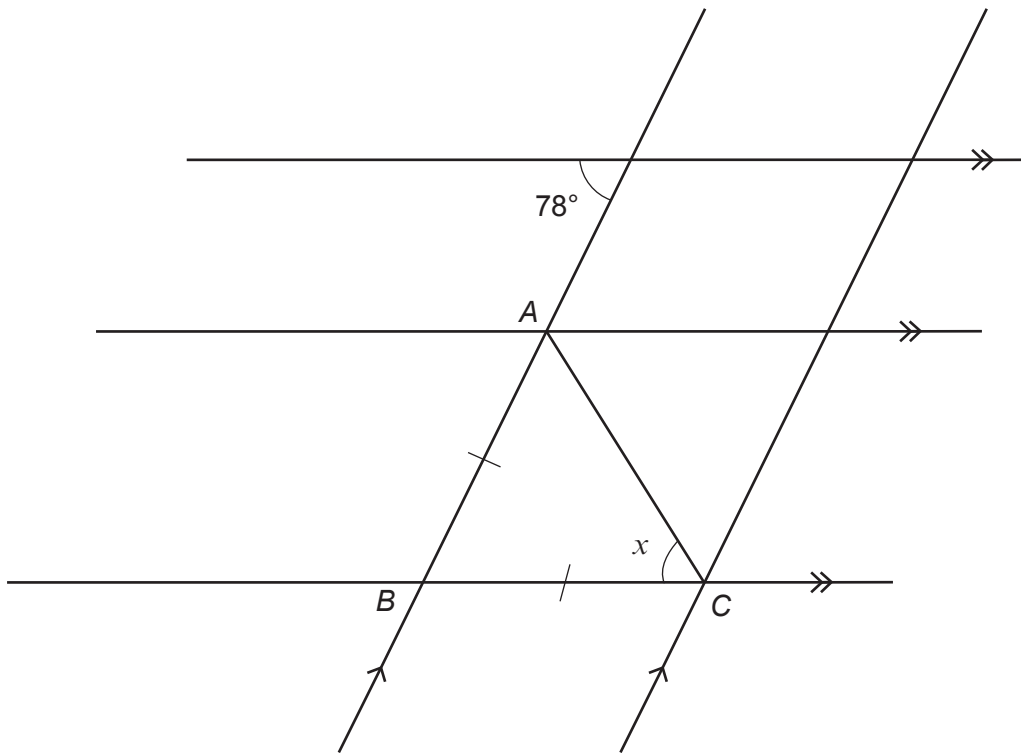


Diagram not drawn to scale

In the diagram above, $AB = BC$.

Find the value of x .

You must show all the steps of your working.

[3]

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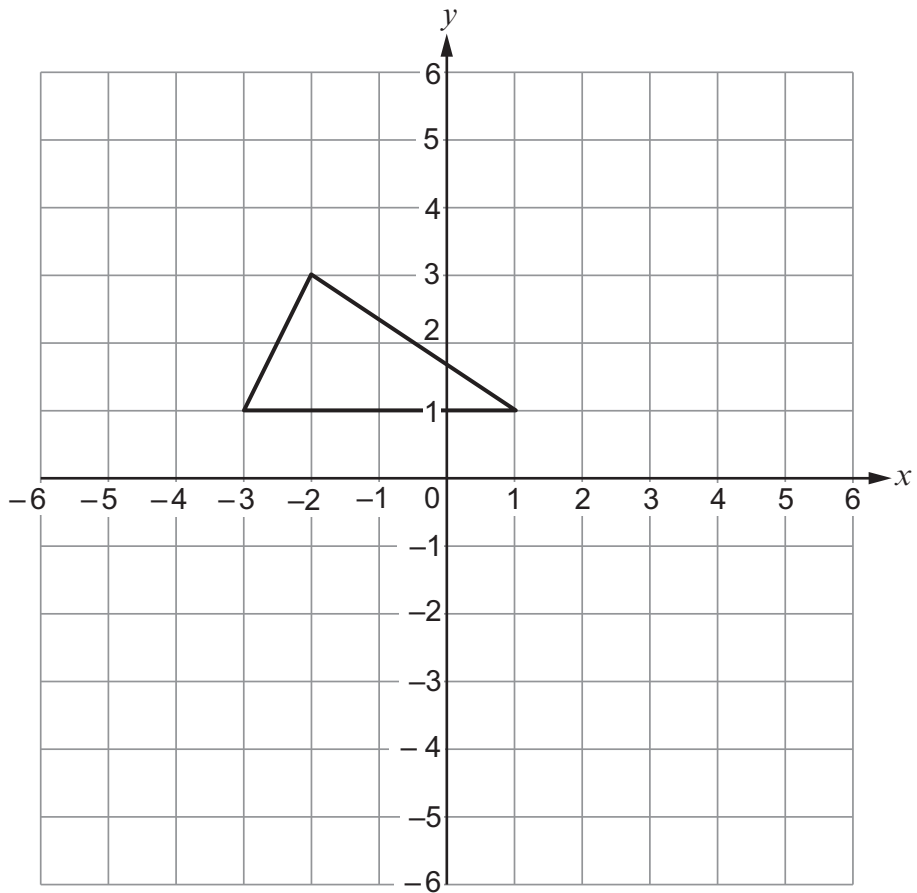
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$x = \dots\dots\dots^\circ$

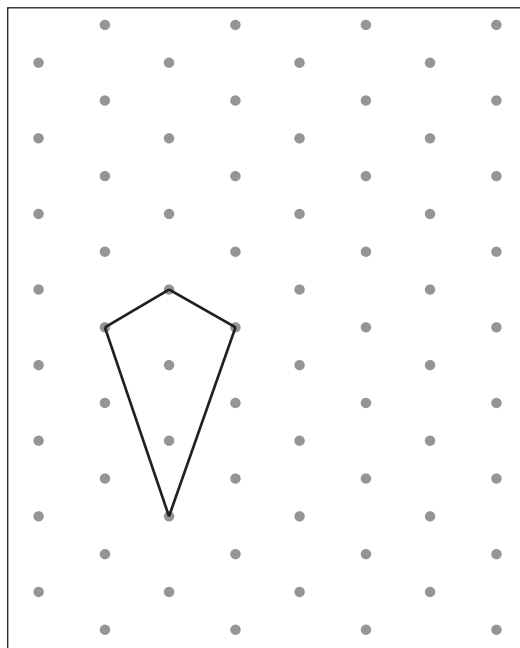
13. (a) Reflect the triangle in the line $y = -1$.

[2] Examiner only



(b) Elin has bought a box of kite-shaped tiles to decorate part of her bathroom wall. She does not intend to use tiles of any other shape on this part of the wall.

A scale drawing of one of the tiles has been drawn on the isometric grid below. Show how it is possible to tessellate the tiles. You should draw at least **seven** additional shapes. [2]



14. The village of Sumston is organising a Spring Fayre to raise money for the local community centre.

- (a) In the 'lucky dip', everyone wins either a toy, a pen or a pencil.
The probabilities of winning the different prizes are given in the following table.

Prize	Toy	Pen	Pencil
Probability	x	$3x$	$16x$

Find the value of x .

[2]

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- (b) To promote the sale of raffle tickets at the Spring Fayre, a free second ticket is given with every ticket bought.



Stephen thinks this offer will double his chance of winning a prize.
Is Stephen correct?
You must explain your answer.

[1]

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15. (a) Simplify

(i) $3t^2 \times 4t^7$ [1]

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(ii) $\frac{p^8}{p^2}$ [1]

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(b) Solve $x - 2 = 4(2x + 3)$. [3]

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(c) Express 396 as a product of prime numbers in index form. [3]

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