

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4352/01



W16-4352-01

MATHEMATICS (UNITISED SCHEME)

UNIT 2: Non-Calculator Mathematics

FOUNDATION TIER

A.M. WEDNESDAY, 13 January 2016

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

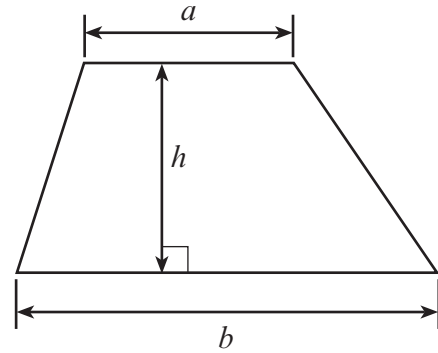
You should give details of your method of solution when appropriate.
Unless stated, diagrams are not drawn to scale.
Scale drawing solutions will not be acceptable where you are asked to calculate.
The number of marks is given in brackets at the end of each question or part-question.
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 4.

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	8	
2.	4	
3.	4	
4.	6	
5.	3	
6.	2	
7.	3	
8.	8	
9.	4	
10.	2	
11.	4	
12.	3	
13.	5	
14.	5	
15.	4	
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) Write eight hundred and forty-five thousand in figures. [1]

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- (b) What is the sum of 435 and 267? [1]

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- (c) Write down the value of $\sqrt{81}$. [1]

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- (d) Write down all the factors of 14. [2]

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- (e) Elen found an offer for a year's subscription for her favourite magazine.

<p>Just £18 for 12 copies</p> <p>Save £30!</p>
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- (i) How much does one copy of the magazine cost if Elen uses the offer? [2]

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- (ii) How much does the year's subscription cost without the special offer? [1]

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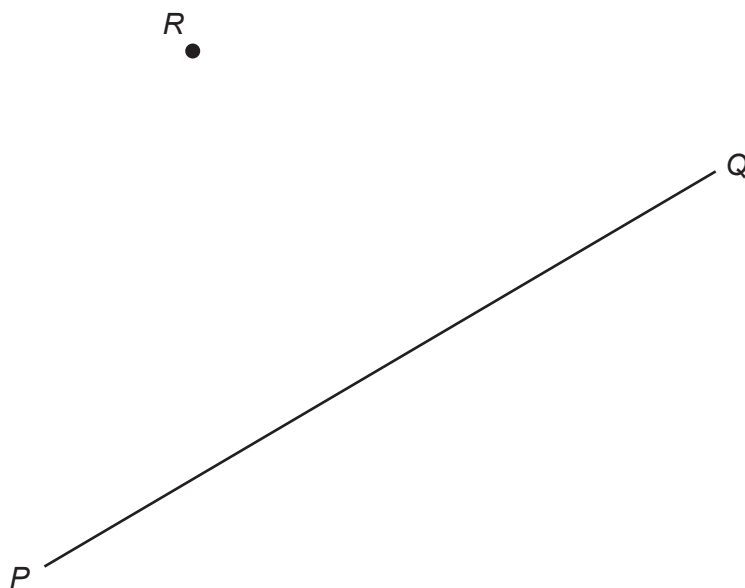
2. (a) On the diagram below, draw a line AC so that \widehat{BAC} is an obtuse angle.
Mark \widehat{BAC} clearly on your diagram.

[1]



- (b) Draw a line parallel to PQ which passes through R .

[1]



- (c) Write down the metric unit which is best used to measure
the volume of a pond,
- the weight of a bicycle.

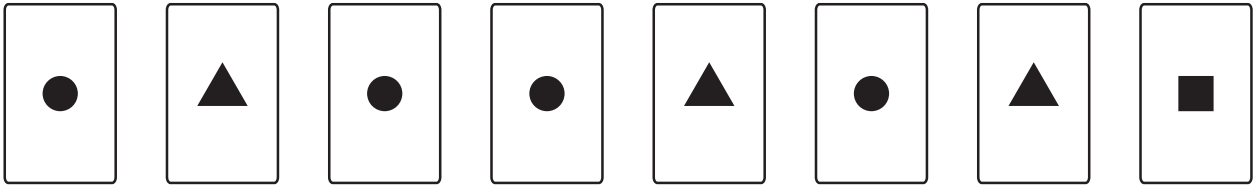
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[2]

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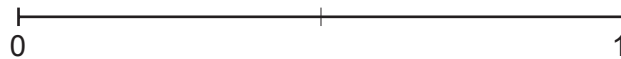
3. Henry has 8 cards which are shown below.




He puts the cards in a box and then chooses one card at random.


(a) On the probability scale shown below, mark the points A and B where:

- (i) A is the probability of Henry choosing a card with  on it, [1]
- (ii) B is the probability of Henry **not** choosing a card with  on it. [1]



- (b) (i) Circle the best expression from those given below to describe the chance of Henry choosing a card with  on it. [1]

impossible **unlikely** **an even chance** **likely** **certain**

- (ii) Circle the best expression from those given below to describe the chance of Henry choosing a card with  on it. [1]

impossible **unlikely** **an even chance** **likely** **certain**

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

A garden centre sells apple trees and plum trees.
The apple trees cost £15 each or £25 for two.

Janet went to the garden centre to buy 7 apple trees and 2 plum trees.
She wanted to pay as little as possible for these trees.

Janet had three £50 notes to pay for the trees. She was given £25 change.
How much did Janet pay for each plum tree?
You must show all your working.

[6]

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5. (a) Simplify $6m + 8m - 5m$.

[1]

6

(b) Solve (i) $4x = 32$,

[1]

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(ii) $x + 17 = 90$.

[1]

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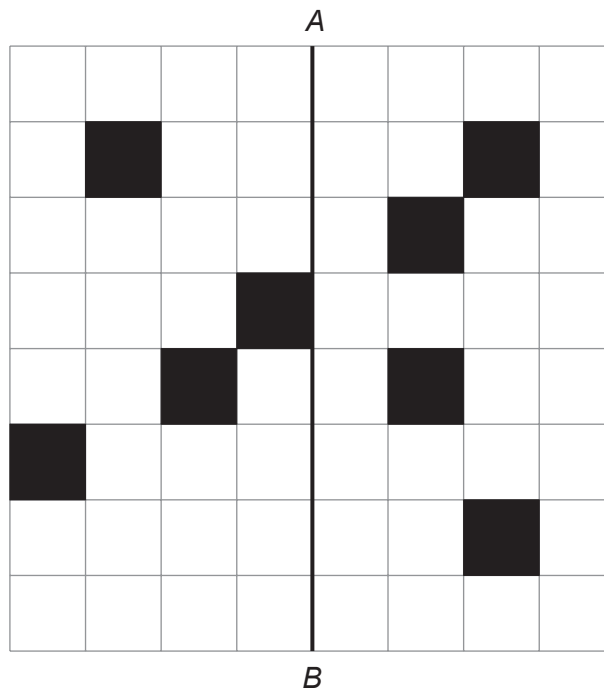
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6. Shade in as few squares as possible so that the pattern is symmetrical about AB .

[2]

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only

7. Annie weighs a £1 coin.
Its weight is 9.5g.
What is the weight of 300 of these coins?
Give your answer in kg.

[3]

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8. (a) The probability of Halim scoring a goal in a football match is 0.7.
What is the probability of him not scoring a goal? [1]

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- (b) Write 0.06784 correct to 3 decimal places. [1]

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- (c) Write 3821 correct to 2 significant figures. [1]

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- (d) Write $\frac{2}{5}$ as a decimal. [1]

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- (e) Write 1% as a fraction. [1]

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(f)

FURNITURE SALE!

Everything reduced by
35%

Billy bought a bed in this sale.
The bed's original cost was £400.
How much did Billy pay for his bed in the sale?

[3]

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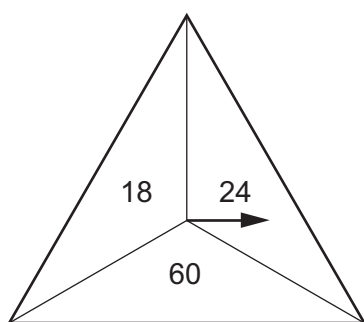
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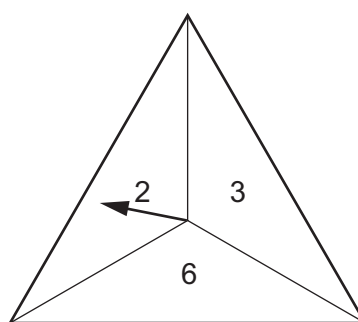
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9. The diagram shows two spinners where each number is equally likely to occur.



Red spinner



Green spinner

Nazreen spins the red spinner and then the green spinner. She divides the number on the **red** spinner by the number on the **green** spinner and adds 5 to the answer. For example, if the number on the red spinner is 24 and the number on the green spinner is 2 then the answer will be $24 \div 2 + 5 = 17$.

- (a) Complete the following table, showing all Nazreen's possible answers. [2]

		Green spinner		
		2	3	6
Red spinner	18			
	24	17		
	60			

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- (b) Find the probability that Nazreen's answer is an even number. [2]

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10. At the Giant's Causeway on the coast of Northern Ireland, columns of rock fit together.



Some of these can be represented as hexagons with all their angles equal.

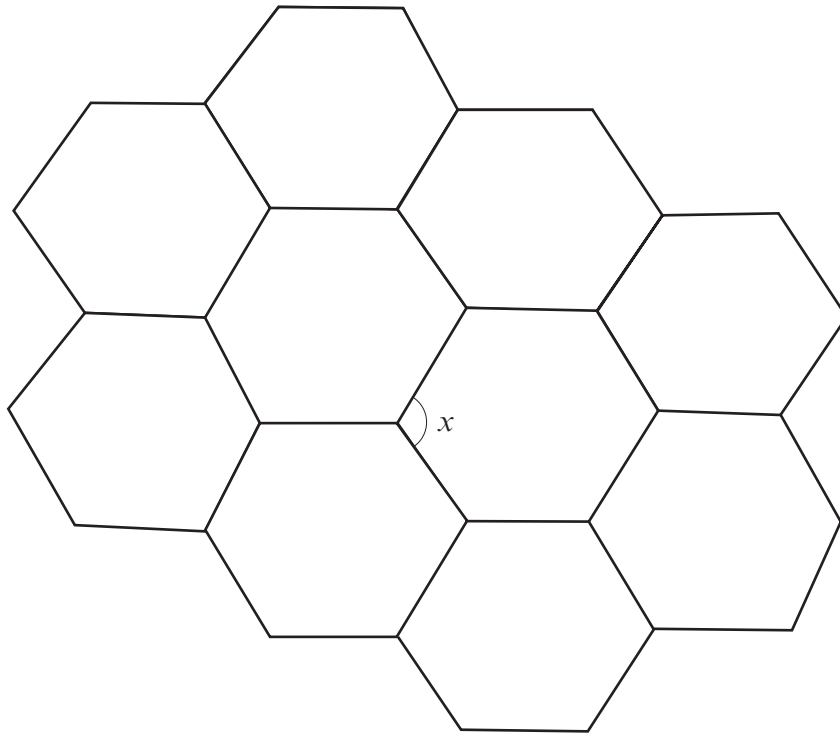


Diagram not drawn to scale

Some of these identical hexagons tessellate, as shown in the sketch above.
What is the size of angle x ?
You must show how you worked out your answer.

[2]

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11. Glyn has a flock of 450 sheep.
It costs £1.75 to shear one sheep.

He wants to have $\frac{4}{9}$ of his flock sheared this week.

How much will it cost Glyn to have these sheep sheared?

[4]

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12. Solve the equation

$$2(2x - 3) = 1.$$

[3]

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13. All the angles in the diagram below are measured in degrees.

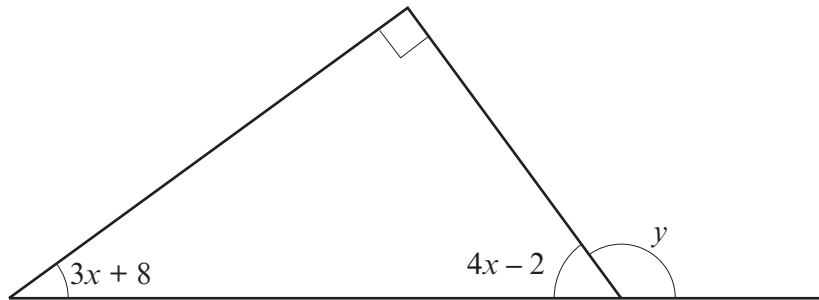


Diagram not drawn to scale

Find the value of x and the size of angle y .
You must show all your working.

[5]

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$x =$ $y =$

5

14. The table shows values of $y = x^2 - 4x + 3$ for values of x from -1 to 5 .

x	-1	0	1	2	3	4	5
$y = x^2 - 4x + 3$	8	3	0		0	3	8

(a) Complete the table above.

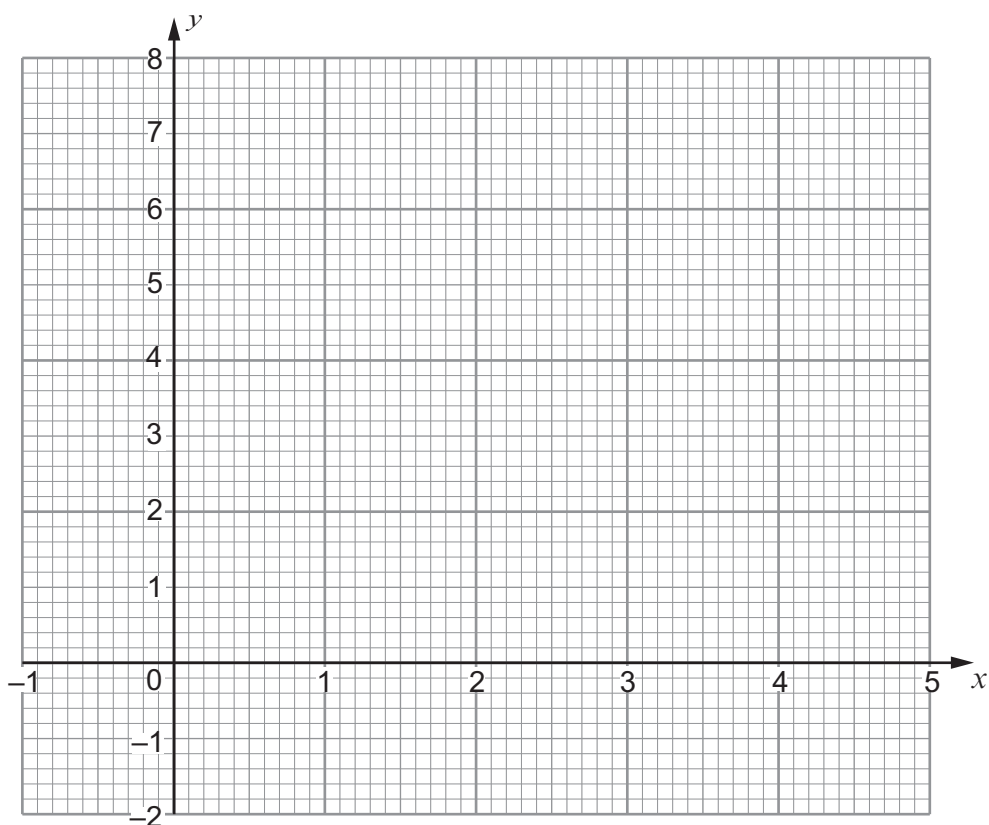
[1]

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(b) On the graph paper below, draw the graph of $y = x^2 - 4x + 3$ for the values of x from -1 to 5 .

[2]



(c) Draw the line $y = 5$ on your graph paper and write down the x -coordinates of the points where this line intersects the curve $y = x^2 - 4x + 3$.

[2]

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15. (a) Express 350 as a product of its prime factors in index form.

[3]

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- (b) As a product of its prime factors, 12 800 can be expressed as $2^9 \times 5^2$.
How do you know that 12 800 is not a square number?

[1]

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END OF PAPER