Surname	Centre Number	Candidate Number
Other Names		0

GCSE

4352/01

MATHEMATICS (UNITISED SCHEME)
UNIT 2: NON-CALCULATOR MATHEMATICS
FOUNDATION TIER

A.M. MONDAY, 16 January 2012

$1\frac{1}{4}$ hours

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

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.

If you run out of space, use the continuation page at the back of the booklet, taking care to number the question(s) correctly.

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 **7**.

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1	**10**	
2	**4**	
3	**6**	
4	**7**	
5	**6**	
6	**3**	
7	**8**	
8	**6**	
9	**2**	
10	**5**	
11	**3**	
12	**5**	
TOTAL MARK		

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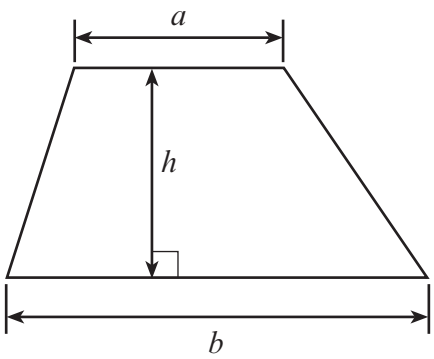
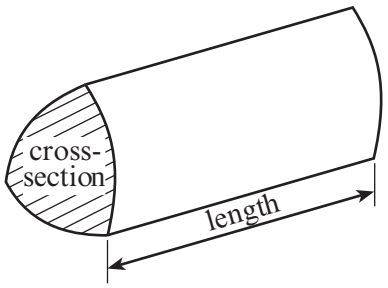
Formula List

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



Volume of prism = area of cross-section × length



1. *(a)* (i) Write down, in figures, the number six thousand and forty three.

.....

[1]

(ii) Write down, in words, the number 32 005.

.....

[1]

(b) Using only the numbers in the following list,

53 36 42 45 55 54 47

write down

(i) two numbers that add up to 90,

.....

[1]

(ii) the number which must be added to 36 to make 81,

.....

[1]

(iii) a multiple of 7.

.....

[1]

(c) Write 45 721

(i) correct to the nearest 100,

.....

[1]

(ii) correct to the nearest 1000.

.....

[1]

(d) Using only numbers between 20 and 29 inclusive, write down

(i) a number which has a factor of 6,

.....

[1]

(ii) a cube number,

.....

[1]

(iii) a prime number.

.....

[1]

2. Write down the metric unit that is best used to measure

the weight of an egg, ...

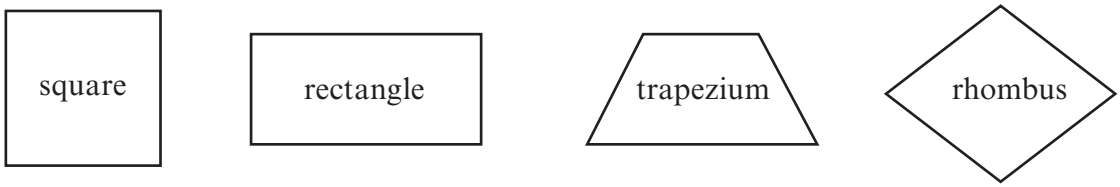
the width of a football field, ...

the distance from Rome to Venice, ...

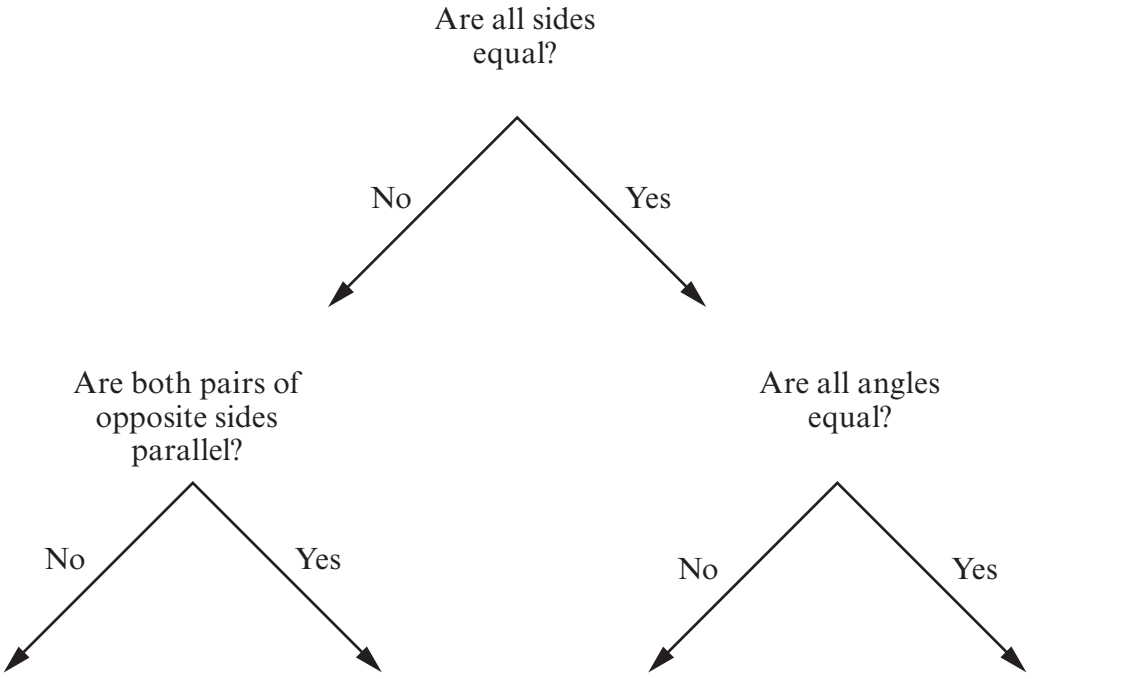
the volume of a petrol tank. .....

[4]

3. *(a)* Susan has a square, a rectangle, a trapezium and a rhombus.



To sort out her shapes, she asks the following questions.
On each of the 4 lines below the diagram, **write the name** of the quadrilateral that should appear there.

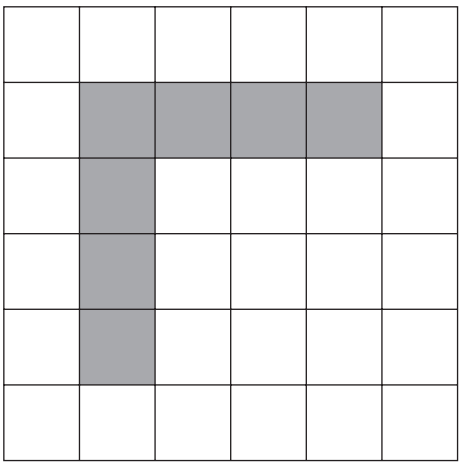


....

[4]

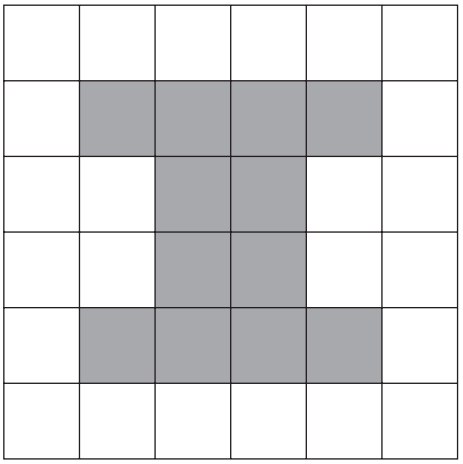
(b) Draw **all** the lines of symmetry on the following figures.

(i)



[1]

(ii)



[1]

Examiner only

4. *(a)* Write down the next term in the sequence.

72, 64, 56, 48, ...

[1]

(b) Describe, **in words**, the rule for continuing **each** of the following sequences.

(i) 10, 21, 32, 43, ...

Rule: .....

.....

[1]

(ii) 128, 64, 32, 16, ...

Rule: .....

.....

[1]

(c) (i) Write down the value of $\sqrt{49}$.

.....

[1]

(ii) Write 9% as a decimal.

.....

[1]

(d) Find 80% of 60.

.....

.....

.....

.....

[2]

5. *(a)* (i) A book costs £b.
In a sale, the book is half price.
Write down, in terms of b, the sale price of the book.

.....

.....

[1]

(ii) Jack's height is x cm.
Asif is 4 cm taller.
Write down, in terms of x, Asif's height.

.....

[1]

(b) Gwyneth thinks of a number.
She adds 5 to her number.
She then multiplies the result by 4 and gets 52.
What was her number?

.....

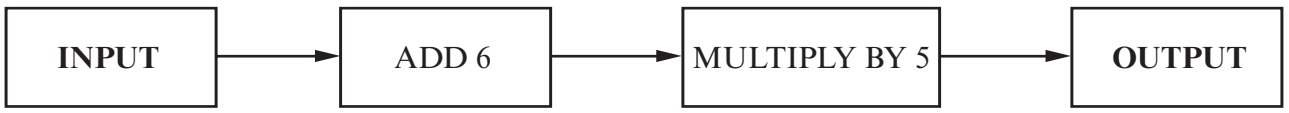
.....

.....

.....

[2]

(c) Here is a number machine.



Write down the **OUTPUT** when the **INPUT** is n.

.....

.....

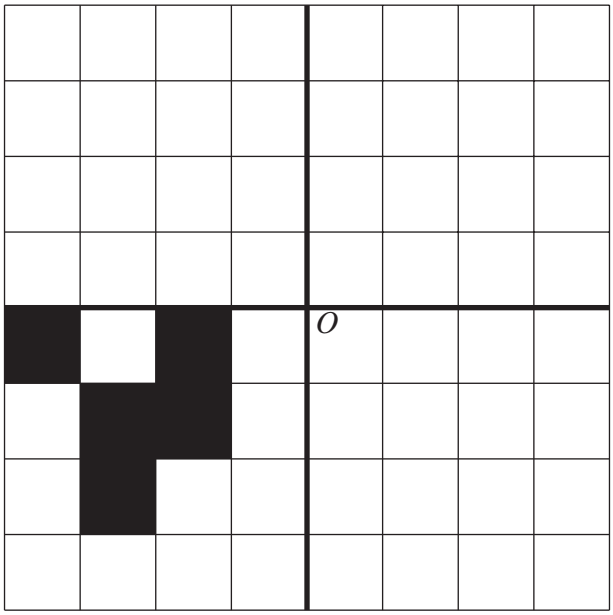
.....

.....

[2]

Examiner only

6. Draw patterns like the given one in each of the other 3 sections so that the completed pattern has rotational symmetry of order 4 about *O*.



[3]

Examiner only

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

Two builders merchants, Davies and Jones, buy bricks at the same price.
Davies sells 10 bricks for £6 and Jones sells 8 bricks for £4.
One day, they sell the same number of bricks and Davies makes £20 **more** profit than Jones.
How many bricks did each merchant sell?

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[8]

8. A red bag contains four cards numbered 2, 3, 4 and 5 respectively.
A green bag contains four cards numbered 2, 4, 5 and 6 respectively.
In a game, a player takes one card at random from each of the two bags.
The score for the game is the product of the two numbers on the cards.

(a) Using the grid below, complete the table to show all the possible scores.
Some entries have been done for you.

Green bag					
	5		15		
	4				
			3		

Red bag

[3]

(b) Find the probability that the score is

(i) 15 or less,

.....

.....

[2]

(ii) 16 or more.

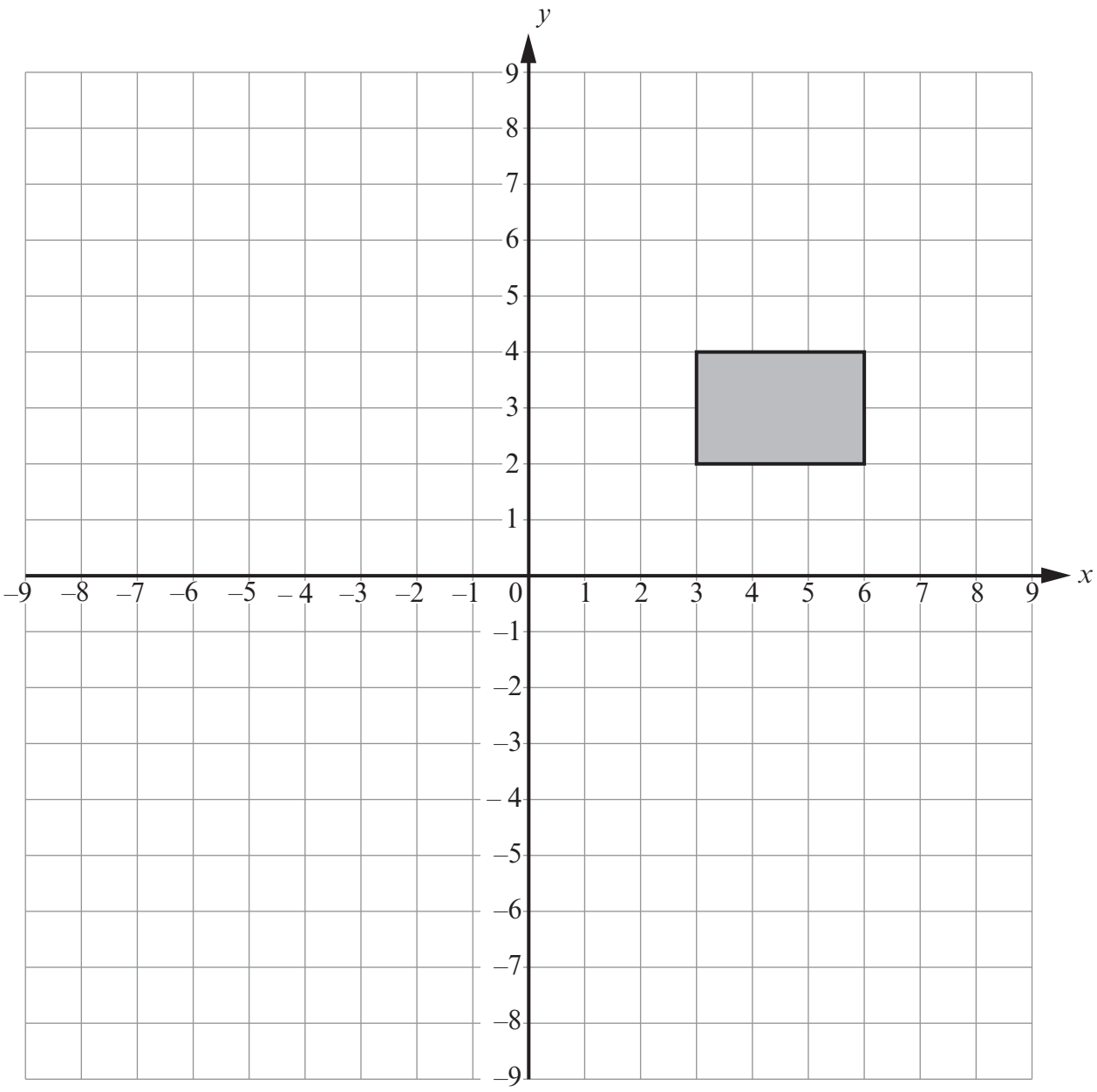
.....

.....

[1]

Examiner only

9. Rotate the rectangle through 90° clockwise about the point (1, 4).



[2]

Examiner only

10. *(a)* The diagram shows three parallel paths with a cycle track connecting them.

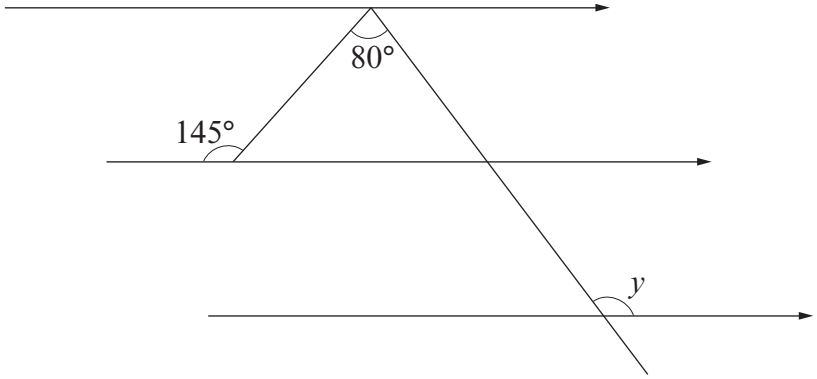


Diagram not drawn to scale

Calculate the size of the angle marked *y*.

.....

.....

.....

.....

$y =$ ..... °

[2]

(b)

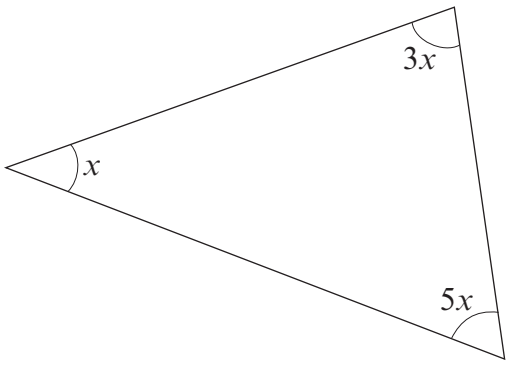


Diagram not drawn to scale

Calculate the size of each of the angles in the triangle.

.....

.....

.....

.....

.....

[3]

Examiner only

11. Explain why the sum of the interior angles of any quadrilateral is always 360°.

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.....

[3]

Examiner only

12. *(a)* Simplify $4(x + 5) - 3(2x - 4)$.

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.....

.....

[2]

(b) Simplify $\frac{y^{16} \times y^2}{y^4}$.

.....

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.....

[1]

(c) Solve $3b + 2 > 29$.

.....

.....

.....

.....

[2]

Question number	Additional page, if required. Write the question number(s) in the left-hand margin

Examiner only