| Surname | Centre Number | Candidate Number |
|---|---|---|
| Other Names | | 0 |

# GCSE

4352/01

# MATHEMATICS (UNITISED SCHEME)

## UNIT 2: Non-calculator Mathematics
## FOUNDATION TIER

A.M. FRIDAY, 13 June 2014

1 hour 15 minutes

**Suitable for Modified Language Candidates**

**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. 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 $\pi$ 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.** | **9** | |
| **2.** | **3** | |
| **3.** | **2** | |
| **4.** | **2** | |
| **5.** | **3** | |
| **6.** | **9** | |
| **7.** | **7** | |
| **8.** | **3** | |
| **9.** | **4** | |
| **10.** | **4** | |
| **11.** | **2** | |
| **12.** | **6** | |
| **13.** | **5** | |
| **14.** | **2** | |
| **15.** | **4** | |
| **Total** | **65** | |

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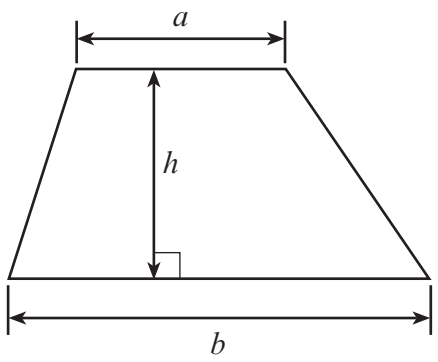
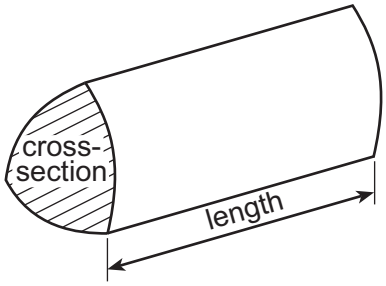
J U N 1 4 4 3 5 2 0 1 0 1

## Formula List

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




**Volume of prism** = area of cross-section × length



Examiner only

**1.** *(a)* Using this list of numbers,

330 328 371 387 379 388 339

(i) write down the smallest number, [1]

.....

(ii) write down the largest number. [1]

.....

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

33 42 63 19 8 36 18 54

write down

(i) two numbers that add up to 87, [1]

.....

(ii) the number which must be added to 39 to make 57, [1]

.....

(iii) a factor of 84, [1]

.....

(iv) a square number. [1]

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*(c)* Jane rounded one of the following numbers correct to the nearest 100. Her answer is 23 700.

23 840 23 784 23 649 23 689 23 770

Which number did she round? [1]

.....

*(d)* Write 5489 correct to the nearest 1000. [1]

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*(e)* What is the value of the 4 in the number 34 926? [1]

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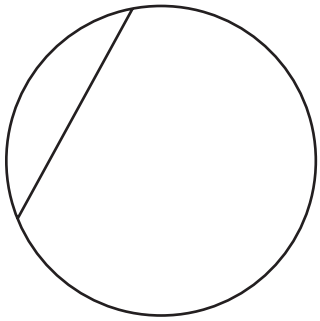
Examiner only

**2.** Write down the correct name for each of the straight lines drawn on the following diagrams. Choose from the list of words below.

**circumference** **arc** **radius** **chord** **diameter** **tangent**

[3]



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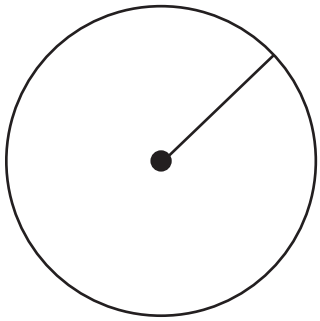

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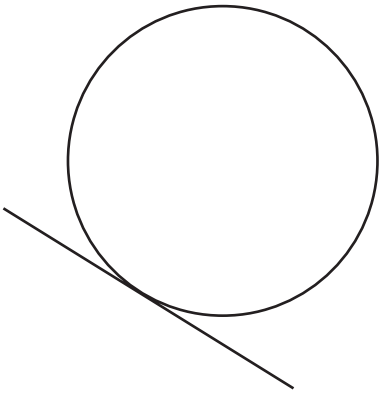

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Examiner only

**3.** *(a)* Owen has a box containing 30 balls.

10 of them are green and 20 are red.

Owen chooses one ball at random from this box.

Circle the best expression from those given below to describe the chance of Owen choosing a green ball. [1]

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

*(b)* Amna has a flock of 70 sheep.

35 of them have white faces and 35 of them have black faces.

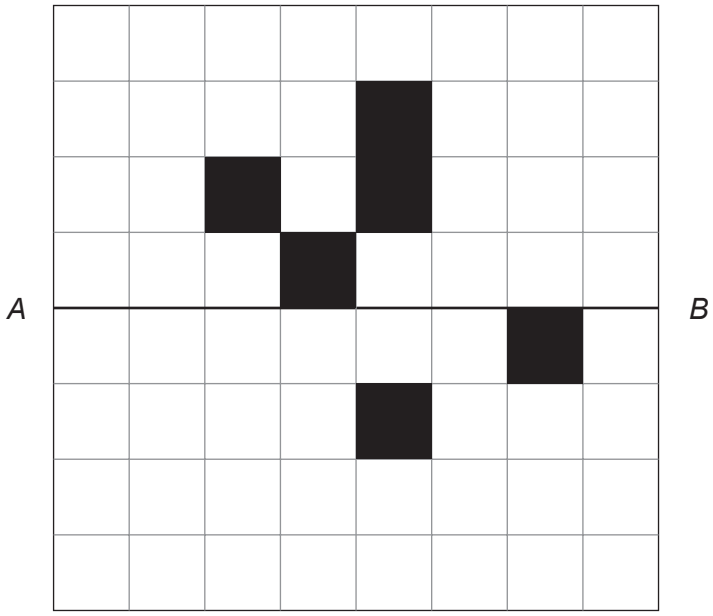
Amna chooses one of her sheep from this flock at random.

Circle the best expression from those given below to describe the chance of Amna choosing a sheep with a black face. [1]

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

Examiner only

**4.** Shade the least number of squares so that the pattern is symmetrical about the line *AB*. [2]



Examiner only

**5.** *(a)* Simplify $3h + 14h - 6h$. [1]

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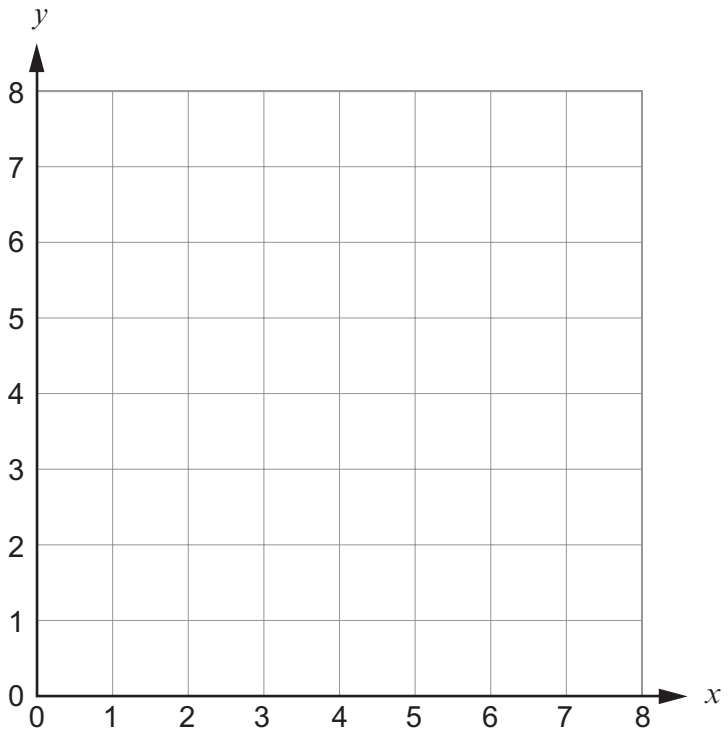
*(b)* On the set of axes below,

(i) plot the point (5, 7) and label it *P*, [1]

(ii) draw the line $y = 4$. [1]



Examiner only

**6.** *(a)* In a maths test, Zac scored $\frac{3}{5}$ of the maximum possible mark.

Josh scored 62% and Lowri's mark was 0·58 of the maximum possible mark.

Which student scored the most marks? Which student scored the least marks?
You must show all your working to support your answer. [3]

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Student with most marks = .....

Student with least marks = .....

*(b)* Mary thinks of a number.
She subtracts 9 from it.
She multiplies the answer by 6 and gets 48.
What number did Mary think of? [2]

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*(c)* Solve

(i) $\frac{x}{3} = 15$ [1]

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(ii) $x + 19 = 32$ [1]

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Examiner only

*(d)* Write down, in the spaces shown, the next two terms in the sequence

24, 22, 18, 12, ..... , .....

[2]

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**Turn over.**

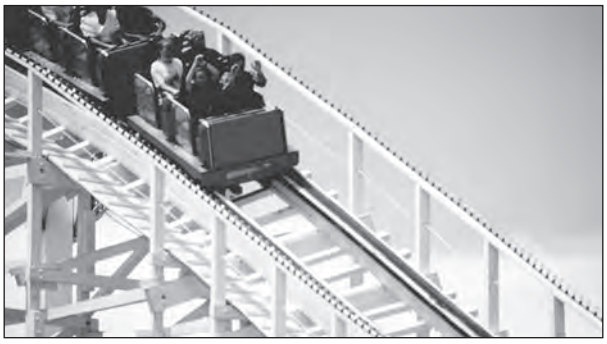
Examiner only

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

Mr and Mrs Morris and their children, Nia and Bryn, went to Addington Theme Park for a day out.

Mr and Mrs Morris planned to go on 6 rides each.

Nia and Bryn planned to go on 8 rides each.



| | Adult price | Child price |
|---|---|---|
| One-day ticket (includes all rides) | £21.50 | £17.50 |
| Individual ride ticket (per person per ride) | £2.50 | £2.50 |

Mr and Mrs Morris bought tickets for themselves and for their children.
They spent as little money as possible.
How much money did it cost them altogether?
You must show all your working clearly. [7]

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Examiner only

Examiner only

**8.** Karim painted a fence.

On Monday, he painted $\frac{7}{10}$ of the fence.

On Tuesday, he painted another $\frac{1}{5}$ of the fence.

On Wednesday, he finished painting the fence.

What fraction of the fence did Karim paint on Wednesday? [3]

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Examiner only

**9.** A manufacturer makes cereal bars.
Each bar is a cuboid, measuring 6 cm by 4 cm by 1 cm.
The manufacturer wants to make a box, with a lid, in which to pack 3 cereal bars.
The bars are packed one on top of the other, so that no space is wasted. This is shown in the diagram below.

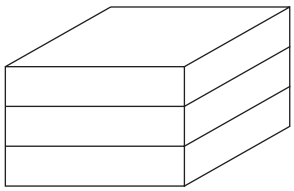

*Diagram not drawn to scale*

Draw an accurate net of the **box** that will hold 3 cereal bars.
One face has been drawn for you. [4]

Examiner only

**10.** Megan is playing a game against Ian.

They each have a bag containing three cards.

Megan's cards are numbered 5, 7 and 9.

Ian's cards are numbered 2, 4 and 6.

Megan chooses a card at random from her own bag. She then chooses a card at random from Ian's bag.

Megan works out the product of the two numbers and adds 3 to her answer.

This total is Megan's score.

For example, if Megan picks a 5 from her own bag and a 2 from Ian's bag, her score will be $5 \times 2 + 3 = 13$.

*(a)* Complete the following table. Show all of Megan's possible scores. [2]

Ian's bag

| Megan's bag | 2 | 4 | 6 |
|---|---|---|---|
| 5 | 13 | | |
| 7 | | | 45 |
| 9 | | | |

*(b)* Find the probability that Megan's score is less than 30. [2]

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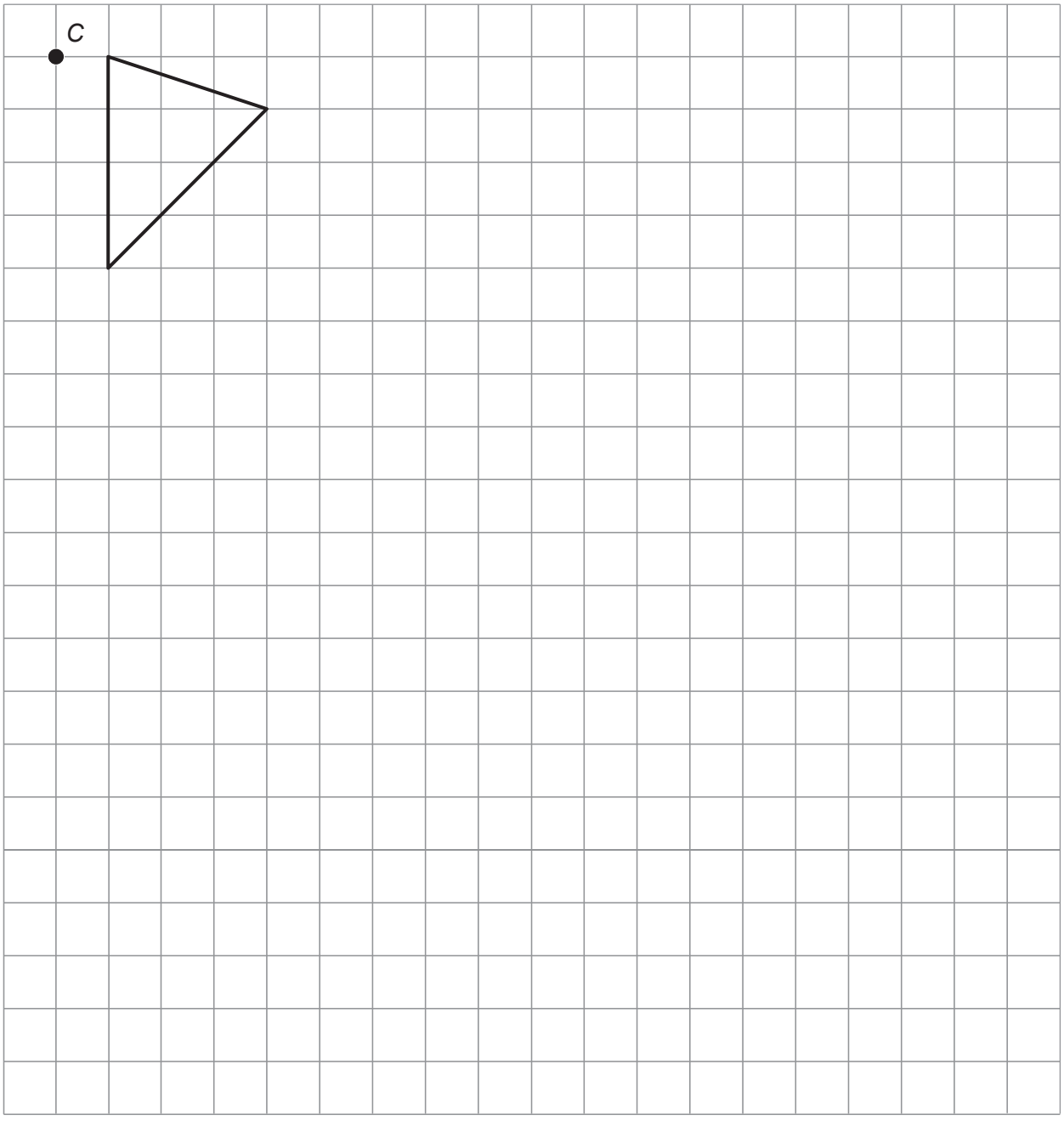
Examiner only

**11.** Enlarge the given triangle. Use a scale factor of 3 and centre *C*. [2]





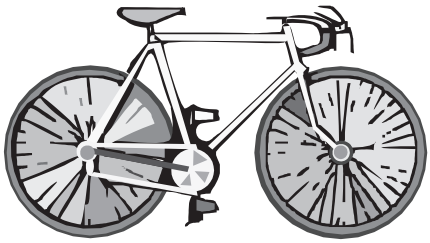





**Turn over.**

Examiner only

**12.** Daniel wants to buy a new bicycle. It is priced at £480.



Daniel can either

- pay £480 immediately, or
- pay a 15% deposit, followed by 24 monthly payments of £22.

*(a)* Calculate the total amount Daniel would pay using the deposit and monthly payments method. [3]
You must show all your working.

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Examiner only

*(b)* Daniel pays using the deposit and monthly payments method. Find the percentage increase in the cost of the bicycle. [3]

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Examiner only

**13.** *ABCD* is a parallelogram. All the angles are measured in degrees.

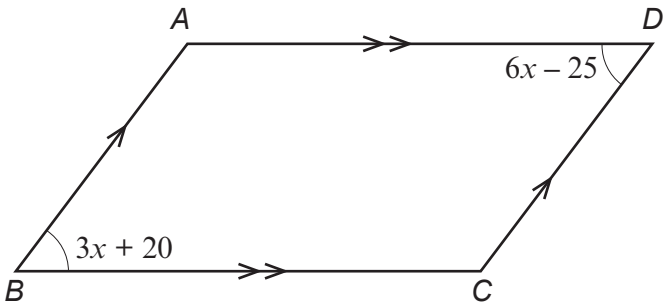


*Diagram not drawn to scale*

Find the size of $B\hat{C}D$. [5]

**14.** Solve the inequality $3 - x < 7$. [2]

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**15.** A school is organising a Summer Fayre.
Carys is making a spinner for her stall.
A sketch of her spinner is shown below.

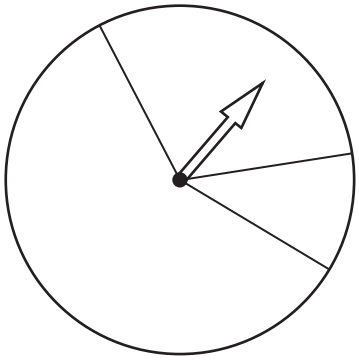

*Diagram not drawn to scale*

The spinner has three sectors. Each sector will be painted a different colour: red, green or yellow.
The sectors are **not** of equal size.

- The probability that the spinner lands on the green sector is $\frac{1}{10}$ .
- The probability that the spinner lands on the yellow sector is twice the probability that the spinner lands on the red sector.

Calculate the angle that the yellow sector makes at the centre of the circle. [4]

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**END OF PAPER**

| Question number | Additional page, if required.<br>Write the question number(s) in the left-hand margin. |
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Examiner only