| Surname |
| :--- |
| Other Names |


| Centre <br> Number | Candidate <br> Number |
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## GCSE

## WJEC CBAC

## 4351/01

## MATHEMATICS (UNITISED SCHEME) <br> UNIT 1: Mathematics in Everyday Life FOUNDATION TIER

A.M. MONDAY, 9 June 2014

1 hour 15 minutes

## ADDITIONAL MATERIALS

A calculator will be required for this paper.
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 or use the $\pi$ button on your calculator.

## 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 <br> Mark | Mark <br> Awarded |
| 1. | 4 |  |
| 2. | 6 |  |
| 3. | 4 |  |
| 4. | 8 |  |
| 5. | 5 |  |
| 6. | 6 |  |
| 7. | 4 |  |
| 8. | 5 |  |
| 9. | 3 |  |
| 10. | 3 |  |
| 11. | 5 |  |
| 12. | 3 |  |
| 13. | 2 |  |
| 14. | 7 |  |
| Total | 65 |  |

## Formula List

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


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


1. A leaflet showed the population of various areas in Wales. It gave the information in words and in figures.
(a) Complete the entries for the following two places in words and figures.

## Anglesey

## Sixty-nine thousand and twenty-five

## Gwent

(b) How much greater was the population of Gwent than the population of Anglesey? Give your answer correct to the nearest 1000.

To the nearest 1000:
2. The number of pets in each house in a street was recorded. A summary of the results is given below.

| Number of pets | 0 | 1 | 2 | 3 | 4 |
| :---: | :--- | :--- | :--- | :--- | :--- |
| Frequency | 6 | 8 | 5 | 2 | 1 |

(a) On the diagram below draw a vertical line diagram to show this information.

Frequency
$\square$

Number of pets
(b) Calculate the total number of pets in these houses.
(b)
$\qquad$
$\qquad$
$\qquad$
3. Four pen-friends recorded the midday temperatures in the cities where they lived.

The diagrams below show the readings given, in ${ }^{\circ} \mathrm{C}$, on the thermometers they used.
Some of the scale notches on two of the thermometers have worn off.






Some

Complete the table below, listing the cities in order of temperature, starting with the coolest. Give the accurate temperatures for London and Berlin.
Give an estimate for the temperatures in Paris and Prague.
Space for notes $\qquad$

Coolest $\qquad$ Warmest

| City |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- |
| Temperature <br> $\left({ }^{\circ} \mathrm{C}\right)$ |  |  |  |  |

4. (a) You will be assessed on the quality of your written communication in this part of the question.

A piece of land with an area of $140 \mathrm{~m}^{2}$ is to be seeded.
Boxes of seed are sold in three different sizes as shown below.


Just enough seed must be bought with no seed left over.
Show clearly how this could be done in two different ways.
Calculate the cost in each case.
Show all your working.
 It is rectangular and measures 15 metres by 11 metres. If you bought the same amount of seed as in part (a), which extra box of seed would you need to buy in order to have just enough seed for this piece of land? You must show all your working to support your answer.
5. A hedge-cutting firm uses the following formula to calculate how much they should charge customers.

$$
\text { Charge }=£ 2 \text { per } 10 \text { metre length }+ \text { cost of fuel }
$$

(a) How much would the firm charge a farmer for cutting 640 metres of hedge when the cost of the fuel used was $£ 12$ ?
$\qquad$
(b) A town council was charged $£ 205$ to cut the hedges in the local park.

The cost of the fuel used was $£ 15$.
How many metres of hedge were cut?

6. A Youth Hostel $(H)$ is situated on the shore of a lake as shown below.

Two points, $A$ and $B$, are also on the shore of the lake.
Both points are 150 metres from $H$, and $A$ is further north than $B$.
(a) (i) Using a scale of,

1 cm represents 25 metres,
clearly mark with dots $(\bullet)$ the position of point $A$ and the position of point $B$.

(ii) What is the actual distance between point $A$ and point $B$ straight across the lake?
(b) Steve rows in a straight line from $H$ to point $A$.

At point $A$ he turns and rows in a straight line from point $A$ to point $B$.
Use your protractor to measure the obtuse angle he turns through at point $A$.

Obtuse angle turned through = $\qquad$。
8. Anna travelled 200 miles by car from Preston to Bristol.

Her car clock showed the time to be 13:25 at the start of her journey.
She stopped at a motorway service station at 3:40 p.m.
At 4:05 p.m. she continued on her journey.
When she arrived at Bristol her car clock showed the time to be 17:50.
What was her average speed whilst driving?
You must give the units for your answer.
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9. A concrete base is to be laid for a garage.

The base must measure 5.5 metres long, 3.8 metres wide and have a depth of 12 centimetres.


Diagram not drawn to scale

What will be the volume of this concrete base in cubic metres $\left(\mathrm{m}^{3}\right) ?$
$\qquad$
$\qquad$
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$\qquad$
10. The diagram shows the positions of two ships $A$ and $B$. Ship $A$ and ship $B$ both receive a distress call at the same time. Ship $A$ locates the call on a bearing of $135^{\circ}$. Ship $B$ locates the call on a bearing of $215^{\circ}$.

On the diagram below show the position from where the distress call was sent.

11. A currency exchange shop displays the following two posters.

## Need some euros this Summer?

£1 will buy you 1.28 euros.

Back from holiday? Need to change your euros into pounds?

### 1.50 euros will buy you $£ 1$.

Keith went to the exchange shop to buy 600 euros for his trip to Portugal.
The following day he realised that he would be unable to go on the trip.
He returned to the exchange shop and changed the 600 euros back into pounds.
The shop was displaying the same information as shown above.
How much money did Keith lose because of these two transactions?
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12. Martha wants to test the following hypothesis.

## 'More men than women buy a daily newspaper.'

She plans to

- hand out a short questionnaire at a Women's Institute meeting,
- ask the following questions in the questionnaire,

- collect their replies at the next meeting.

Write down three unfavourable comments about this plan.
1.
2.
3. $\qquad$
13. Calculate $\sqrt{(24 \cdot 6-13 \cdot 8)^{3}}$, correct to 3 significant figures.
14. (a) A company was set up with 500 workers.

At the end of each of the first three years the company employed more workers. The number of additional workers employed each year was equal to two-fifths of the number of workers that were there at the start of that year.

How many people worked for the company in the fourth year?
(b) Calculate the percentage increase in the number of workers from the first year to the fourth year.


