

Print copy of Braille text (UEB)

WJEC GCSE

3300U30-1

Mathematics

Unit 1: Non-Calculator

Intermediate Tier

Thursday 15 May 2025 – Morning

1 hour 45 minutes **plus your additional time allowance****ADDITIONAL MATERIALS**

You must have: Tactile ruler and protractor, compasses and drawing equipment e.g. geometry board, rubber mat, mapping pins, rubber bands, drawing stylus and spur wheel.

ITEMS INCLUDED WITH QUESTION PAPER

- **A separate Formula List.**
- **A separate Diagram Booklet.**
- **Bumpons for Question 13 (b).**
- **Cut out shapes for Question 2**
- **Wikki Stix for Question 13 (c).**

INSTRUCTIONS TO CANDIDATES

- **On your paper**, write your name, centre number and candidate number.
- Answer ALL the questions **on your paper**.
- The use of a calculator is NOT permitted in this examination.
- 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.

In Question 9, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

1. (a) Calculate $7^2 \times 2^3$

Ans: ____ [2 marks]

(b) Calculate 0.04×0.9

Ans: ____ [1 mark]

(c) Calculate 11% of 8400

Ans: ____ [2 marks]

(d) Write down the next two numbers in the following sequence.

18, 16, 12, 6, ____, ____

Ans: ____, ____ [1 mark]

2. Look at the diagram for Question 2 in the separate Diagram Booklet.
The diagram shows some shaded squares on a grid.

Shade the least number of squares so that the grid shown has rotational symmetry of order 4

A spare tactile diagram and cut out squares are provided for this question.
[2 marks]

3. ESTIMATE the value of 89×6349

You must show all your working.

Ans: ____ [2 marks]

4. Write 0.62, 68% and $\frac{13}{20}$ in ascending order.

You must show all your working.

Ans: Smallest value ____ Greatest value [3 marks]

5. Look at the diagram for Question 5 in the separate Diagram Booklet.
The diagram is NOT drawn to scale.

In the diagram:

- EG is a straight line
- FGH is an isosceles triangle.
- Angle FGH = 50°
- Angle EFH = x°

Calculate the value of x.

Ans: ____ [3 marks]

6. Mari and Ranvir each think of a number.
Here are some clues to find their numbers.

Mari's number

A whole number less than 20

A multiple of 6

Ranvir's number

Half of Ranvir's number is $\sqrt{25}$

The product of their numbers is between 100 and 150

Find Mari's number and Ranvir's number, and calculate the product of their numbers.

You must show all your working.

Ans: Mari's number is ____ Ranvir's number is ____

Ans: The product of Mari and Ranvir's numbers is ____

[5 marks]

7. There are 200 pupils in a school hall.
The pupils are from Year 7 to Year 11

One of the pupils is chosen at random.

(a) Complete the table below.

	Probability
Year 7	0.2
Year 8	0.3
Year 9	0.26
Year 10	0.14
Year 11	(i)

Ans: (i) ____ **[2 marks]**

(b) How many of the pupils are in Year 10?

Ans: ____ **[2 marks]**

8. Solve $12y - 3 = 7y + 15$

Ans: ____ [3 marks]

9. IN THIS QUESTION, YOU WILL BE ASSESSED ON THE QUALITY OF YOUR ORGANISATION, COMMUNICATION AND ACCURACY IN WRITING.

Look at the diagram for Question 9 in the separate Diagram Booklet.
The diagram is NOT drawn to scale.

The diagram shows a trapezium, ABCD.

The area of the right-angled triangle, AED, is 24 cm^2

The length of AB is 3 cm.

The length of DE is 4 cm.

The length of EC is 10 cm.

Calculate the area of the trapezium, ABCD.

You must show all your working.

Ans: ____ [5 marks + 2 marks OCW]

10. Geraint cycles 18 miles in 1 hour 30 minutes.

Calculate Geraint's average speed.

Give your answer in miles per hour.

Ans: ____ [3 marks]

11. Look for the diagram for Question 11 in the separate Diagram Booklet.
The diagram is NOT drawn to scale.

In the diagram:

PR is parallel to ST

Angle PQT = 65°

Angle TQU = 60°

Angle RQU = 55°

Angle QTU = x

Angle VUQ = y

(a) Find the size of angle x .

Ans: ____ [1 mark]

(b) Find the size of angle y .

Choose your answer from the following list:

55° 115° 120° 125° 135°

Ans: ____ [1 mark]

12. Look at the diagram for Question 12 in the separate Diagram Booklet. The diagram shows a Venn diagram.

A group of 100 pupils attended their school sports day.
13 pupils did not compete in either Track or Field events.

The expressions in the Venn diagram represent the number of pupils in each category.

The universal set, $\mathcal{E}$, contains all the pupils.

(a) Find the value of y .

Ans: ____ [4 marks]

(b) One pupil is chosen at random from the group.

What is the probability that this pupil competed only in Track events?

Ans: ____ [2 marks]

13. The table below shows some of the values of $y = 2x^2 - 6$ for values of x from -3 to 2

x	$y = 2x^2 - 6$
-3	(i)
-2	2
-1	-4
0	-6
1	(ii)
2	2

(a) Complete the table above.

Ans: (i) ____ (ii) ____ [2 marks]

(b) On the graph paper provided for Question 13 (b) in the separate Diagram Booklet, draw the graph of $y = 2x^2 - 6$ for values of x from -3 to 2

A spare tactile diagram and bumpons are provided for this question.
[2 marks]

(c) Draw the line $y = 1$ on the same graph.

Write down the values of x where the line $y = 1$ cuts the curve $y = 2x^2 - 6$
Give your answers correct to 1 decimal place.

Wikki Stix are provided for this question.

Ans: $x = \underline{\quad}$ and $x = \underline{\quad}$ [2 marks]

14. A mass is shared in the ratio $3 : 5$
The larger share is 44 lb (POUNDS).

Calculate the total mass.

Give your answer in KILOGRAMS (kg).
You must show all your working.

Ans: $\underline{\quad}$ [4 marks]

15. The mean of five whole numbers is 20

The mean of three of these numbers is 22
The other two numbers have a difference of 6

Find THE OTHER TWO numbers.

Ans: $\underline{\quad}$ [4 marks]

16. Look at the diagram for Question 16 in the separate Diagram Booklet.
The diagram shows the graph of a straight line for values of x from -2 to 2

(a) Write down the gradient of the straight line in the diagram.

Ans: Gradient is $\underline{\quad}$ [1 mark]

(b) Write down the equation of the straight line in the form $y = mx + c$,
where m and c are whole numbers.

Ans: $\underline{\quad}$ [1 mark]

(c) Write down the equation of a different straight line that is parallel to
the straight line in the diagram.

Ans: $\underline{\quad}$ [1 mark]

17. Look at the diagram for Question 17 in the separate Diagram Booklet. The diagram shows four patterns: Pattern 1, Pattern 2, Pattern 3 and Pattern 4

Shaded tiles are used to make patterns as shown in the diagram.

(a) How many shaded tiles would you need to make Pattern n ?

Ans: ____ [2 marks]

(b) What is the number of the pattern you would make when you use exactly 147 shaded tiles?

Ans: ____ [2 marks]

18. 5 kg of cherries and 7 kg of grapes cost £88

2 kg of cherries and 3 kg of grapes cost £36

The cost of 1 kg of cherries is £ x .

The cost of 1 kg of grapes is £ y .

Use an algebraic method, not trial and improvement, to find the total cost of $\frac{1}{2}$ kg of cherries and 6 kg of grapes.

You must show all your working.

Ans: The total cost of $\frac{1}{2}$ kg of cherries and 6 kg of grapes is £ ____

[6 marks]

19. The length of each side of a square is 15 cm, correct to the nearest 1 cm. Calculate the greatest possible perimeter of this square.

Ans: ____ [2 marks]

20. Factorise $x^2 - 11x + 24$

Ans: ____ [2 marks]

21. Look at the diagram for Question 21 in the separate Diagram Booklet.
The diagram is NOT drawn to scale.

In the diagram, ABCD and ABCE are cyclic quadrilaterals.

Angle ABC = y

Angle AEC = x

Angle ADC = 79°

(a) Find the size of angle x .

Ans: $x = \underline{\hspace{2cm}}$ degrees

(b) Calculate the size of angle y .

State the CIRCLE THEOREM that you have used to find your answer.

Ans: $y = \underline{\hspace{2cm}}$ degrees

Ans: Circle Theorem:

TOTAL 80 MARKS

END OF PAPER
