Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3300U20-1

A24-3300U20-1

WEDNESDAY, 13 NOVEMBER 2024 – MORNING

MATHEMATICS
UNIT 2: CALCULATOR-ALLOWED
FOUNDATION TIER

1 hour 30 minutes

ADDITIONAL MATERIALS

A calculator will be required for this examination.

A ruler, 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.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

Take π as 3·14 or use the π 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.

In question **7**, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**4**	
2.	**4**	
3.	**3**	
4.	**3**	
5.	**2**	
6.	**4**	
7.	**5**	
8.	**2**	
9.	**5**	
10.	**1**	
11.	**5**	
12.	**4**	
13.	**4**	
14.	**4**	
15.	**5**	
16.	**2**	
17.	**4**	
18.	**4**	
Total	**65**	

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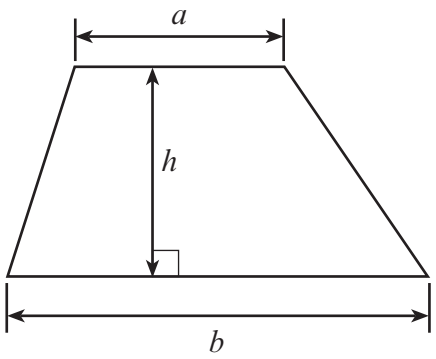
Formula List – Foundation Tier

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



Examiner only

1. Complete the calculations below. [4]

325	+	.....	=	1297
.....	–	694	=	149
.....	×	53	=	4505
1344	÷	.....	=	21

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Turn over.

Examiner only

2. (a) Write down, in figures, the number four hundred thousand, one hundred and eight. [1]

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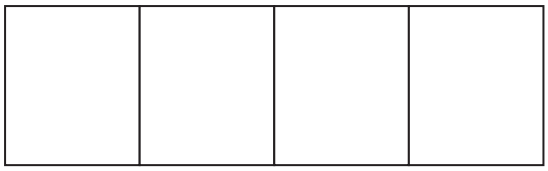
(b) Stef uses each of the digits 4, 5, 9 and 3 to make a four-digit number.

What is the largest number that she can make that is a multiple of 5? [1]



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(c) Write down **all** the factors of 20. [2]

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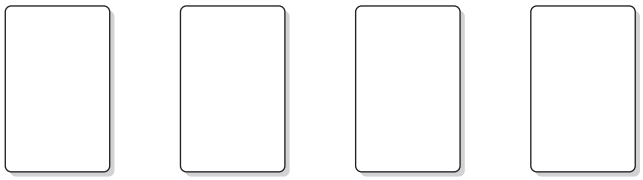
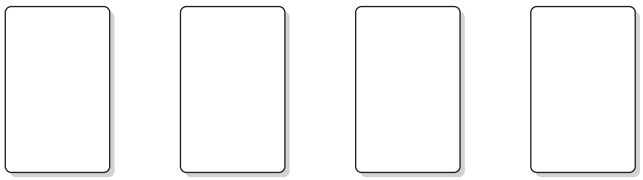
3. Cerys chooses a card at random from three different sets of four cards.

In each part, **write numbers on the four cards** to make the statement true.

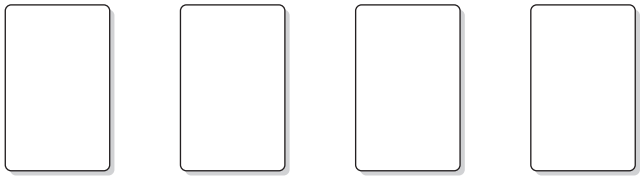
(a) It is impossible that the card Cerys chooses will be a 7. [1]



(b) It is likely that the card Cerys chooses will be a 7. [1]



(c) There is an even chance that Cerys chooses a number less than 7. [1]



Examiner only

4. In the grid below:

- each column must add to 150
- each row must add to 150.

Complete the grid. [3]

83	.....	.....
45	.....	88
.....	93	.....

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5. Sophie says,

"5 minutes 8 seconds is double 2 minutes 54 seconds."

Is Sophie correct?

YES ☐ NO ☐

You must show working to support your answer. [2]

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Turn over.

Examiner only

6. Complete the table below so that each row shows an equivalent fraction, decimal and percentage.
The first row has been completed for you. [4]

Fraction	Decimal	Percentage
$\frac{1}{4}$	0·25	25%
$\frac{9}{10}$	.....	..... %
$\frac{.....}{20}$	.....	15%

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7. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

Lewis chooses four numbers.

The largest number is $\frac{1}{3}$ of 99.

The range of his numbers is 6.
The mode of Lewis's numbers is an **even** number.

Write down four numbers that Lewis could have chosen.
You must show all your working. [3 + 2 OCW]

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Examiner only

8. Use the formula $T = 4A + 8B$ to find the value of T when A = 45 and B = 19. [2]

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9. (a) Tomos wants to find the median of the numbers below.

7 1 20 14 11

He writes the answer 20.

Explain why Tomos's answer is incorrect. [1]

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(b) Ted writes down five numbers:

59 89 77 31 83

(i) Calculate the mean of Ted's numbers. [3]

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(ii) Every number in Ted's list is decreased by 3.
What is the mean of the numbers in his new list? [1]

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Turn over.

Examiner only

10. Abby is asked how many quarters there are in 8.

She writes $8 \div 4 = 2$.

Explain why Abby's method is incorrect. [1]

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11. (a) Calculate the size of angle x. [2]

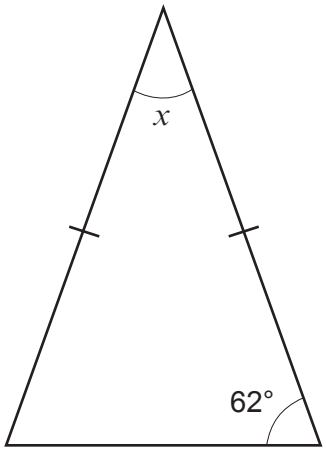

Diagram not drawn to scale

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x = ... °

Examiner only

(b) *PQRS* is a quadrilateral.
QRT is a straight line.
Calculate the size of angle y. [3]

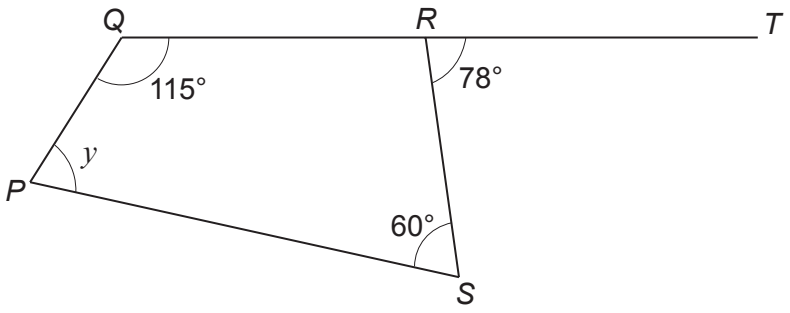

Diagram not drawn to scale

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y = ... °

Turn over.

Examiner only

12. Owen says,

If the longer side of a rectangle is doubled and the shorter side is halved, then the perimeter of the rectangle will stay the same.

Is Owen correct?
Show clearly, using an example, how you decided. [4]

Examiner only

13. (a) Calculate the following.

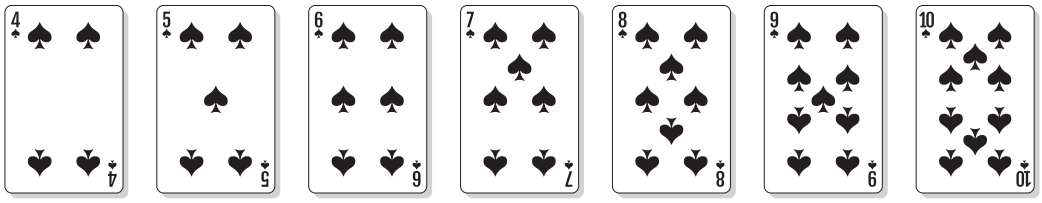
$$\frac{17}{50} \text{ of } 24{\cdot}5 + 78\% \text{ of } 103{\cdot}5$$

You must show all your working. [2]

(b) Express £19.44 as a percentage of £36. [2]

Examiner only

14. Megan has the following 7 playing cards.



She turned these cards face down.
Megan then chose a card at random and recorded the number.

(a) What is the probability that Megan recorded the number 5?
Circle your answer. [1]

$\frac{5}{7}$ $\frac{1}{7}$ 1 5 $\frac{7}{5}$

.....

(b) (i) What is the probability that Megan recorded a square number?
Circle your answer. [1]

$\frac{2}{5}$ $\frac{1}{7}$ $\frac{2}{7}$ $\frac{4}{7}$ $\frac{4}{5}$

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(ii) Megan chooses a card at random 91 times.
How many times would you expect Megan to record a square number?
You must show all your working. [2]

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Examiner only

15. Solve each of the following equations.

(a) $3y - 5 = 19$ [2]

(b) $8p + 5 = 3p - 25$ [3]

Examiner only

16. A bag contains 1 yellow counter and 2 pink counters.
Olga puts more yellow counters into the bag.

She takes one counter out of the bag at random.
The probability of taking a yellow counter out of the bag is $\frac{3}{4}$.

How many **more** yellow counters did Olga put into the bag? [2]

Olga put ..... more yellow counters into the bag

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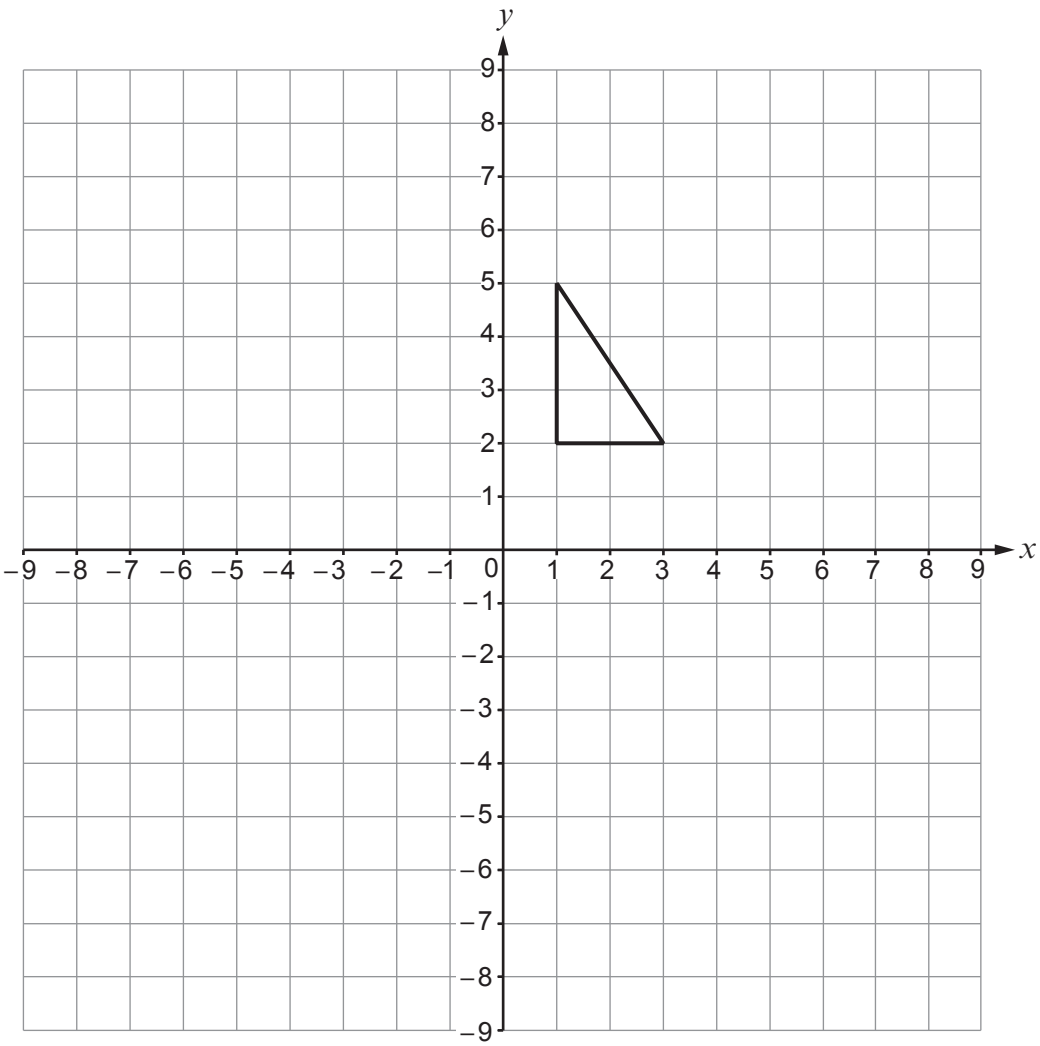
Examiner only

17. (a) Rotate the triangle through 90° clockwise, about the origin. [2]



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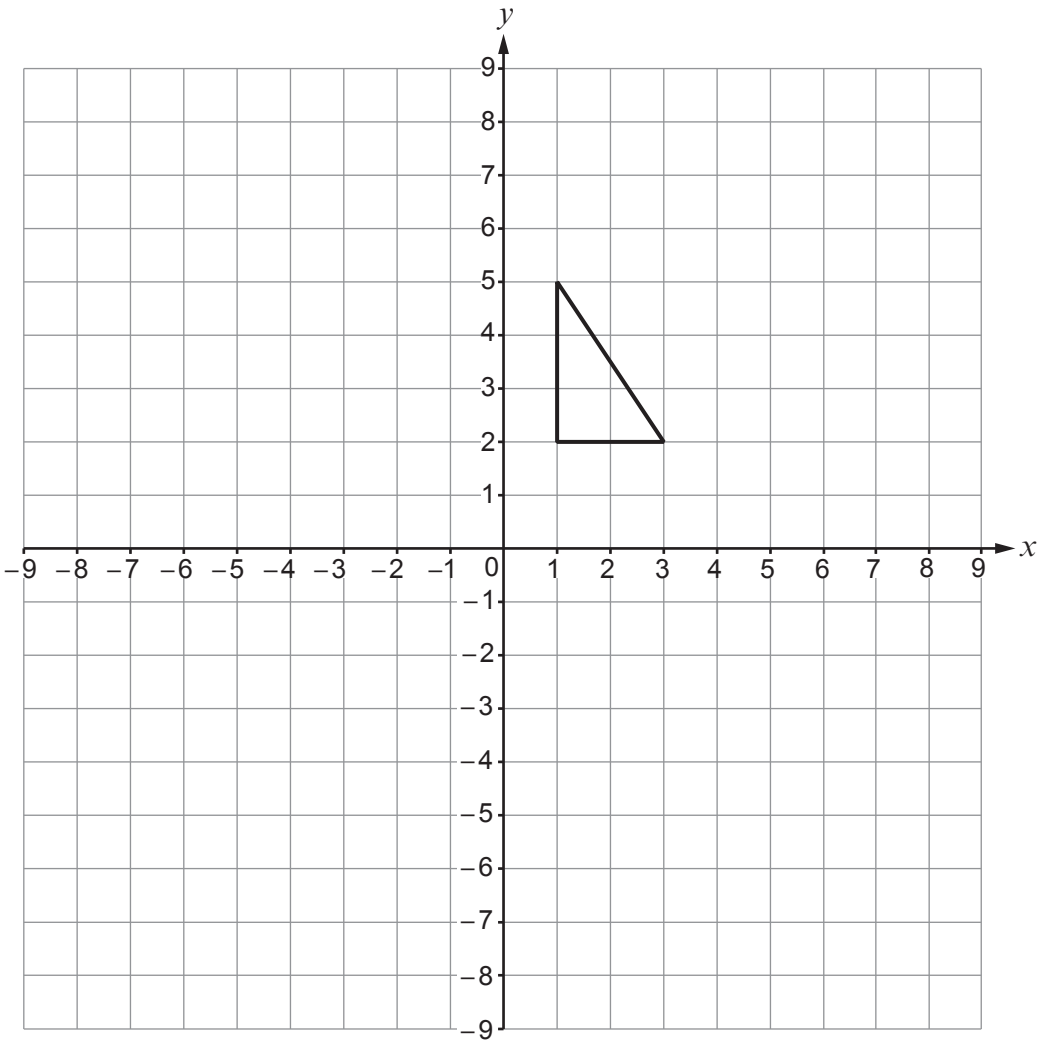
(b) Reflect the triangle in the line $x = -2$. [2]



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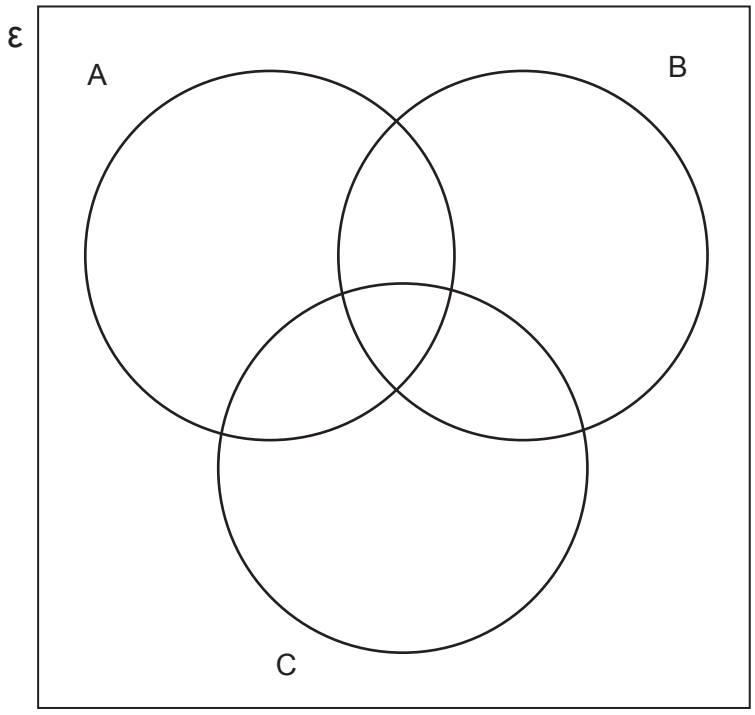
Examiner only

18. Display the following information in the Venn diagram below. [4]

- Universal Set ε = {Integers between 1 and 7 inclusive}
- Set A = {even numbers}
- Set B = {factors of 6}
- Set C = {prime numbers}



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