

Candidate Name	Centre Number					Candidate Number				
						0				



GCSE

**MATHEMATICS
UNIT 2: CALCULATOR-ALLOWED
FOUNDATION TIER**

2nd SPECIMEN PAPER SUMMER 2017

1 HOUR 30 MINUTES

ADDITIONAL MATERIALS

A calculator will be required for this paper.
A ruler, protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

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 in this booklet.

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.

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

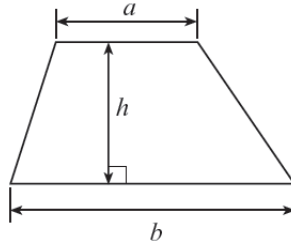
The number of marks is given in brackets at the end of each question or part-question.

The assessment will take into account the quality of your linguistic and mathematical organisation and communication in question **5(c)**.

The assessment will take into account the accuracy of your writing (linguistic and mathematical) in question **14**.

Formula list

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



1. Aneurin and Branwen arranged a party after winning their event at the Urdd. Complete the four entries in the following table to show part of their bill for the food they bought.

Amount	Item	Cost
4 bags	Nuts @ £1.35 a bag	£5.40
7	Pizzas @ £1.75 per pizza
3	Chocolate cakes @ £ per cake	£7.47
..... cartons	Orange juice @ 99p per carton	£8.91
Total	

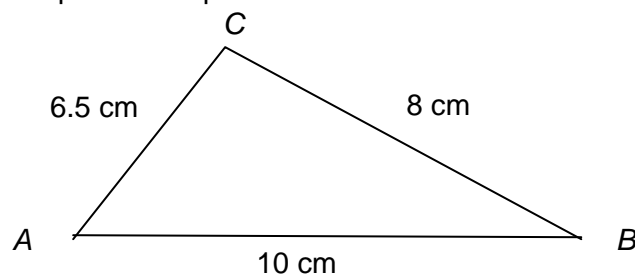
[4]

.....

.....

.....

2. Use a ruler and a pair of compasses to make an accurate drawing of this triangle.

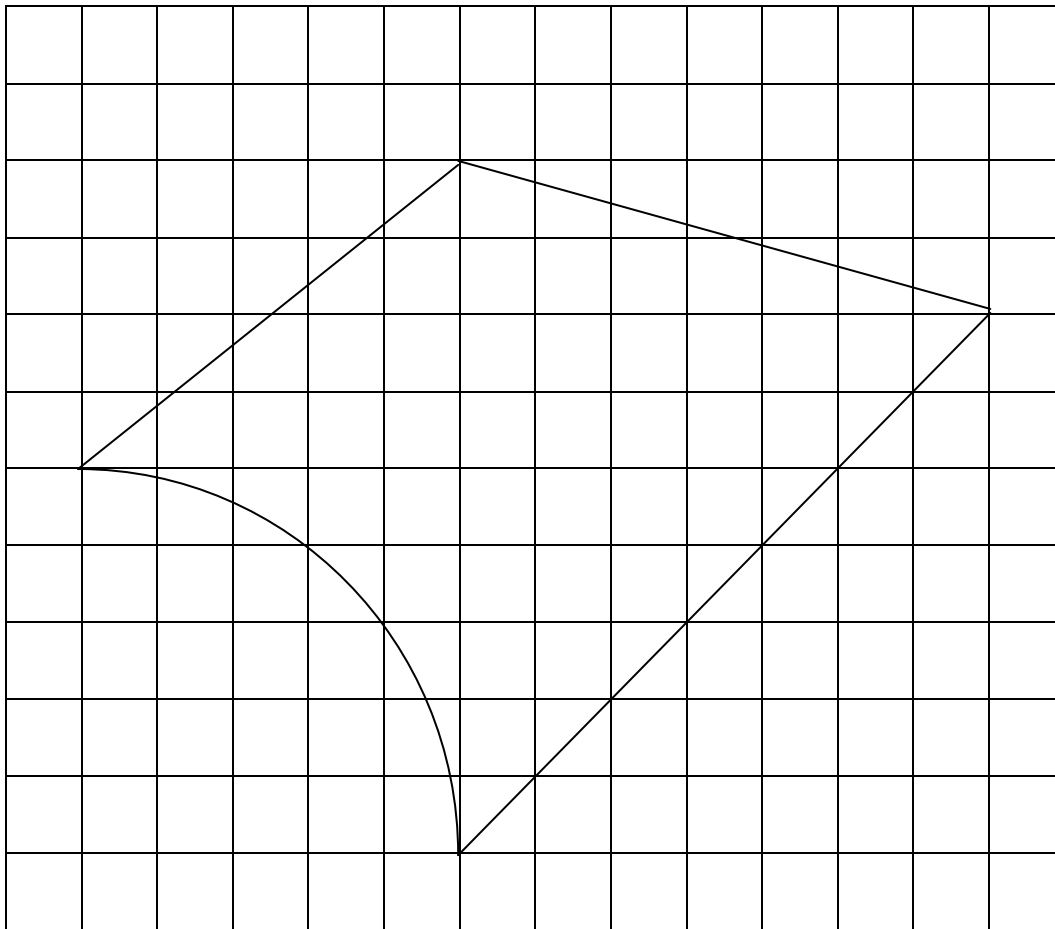


[3]

The line AB has been drawn for you.

A _____ B

3.



Estimate the area of the shape drawn above on a square grid if the area of each square is 1 cm^2 .

[2]

.....

.....

.....

.....

.....

.....

Area of the shape = cm^2

4. (a) Circle the correct word to describe the chance of each of the following events happening.

- (i) Mai has a box containing 100 different cards.
Each card has one number written on it from 1 to 100.
Mai chooses a card at random from the box.
The chance that the number on the chosen card is a 2-digit number is

[1]

impossible unlikely even chance likely certain

- (ii) Dafydd chooses a card at random from a box containing 50 cards.
There are 16 yellow cards in the box.
The chance that the chosen card is yellow is

[1]

impossible unlikely even chance likely certain

- (b) Write down the mode of these numbers.

4 5 4 7 8 4 5 9 3

[1]

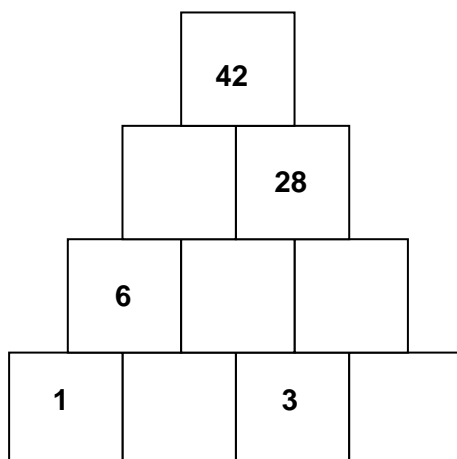
.....

5. (a) Glyn has made a tower of bricks as shown below.
 Each brick has a number on it.
 For each pair of bricks that are next to each other in the same row, the number on the brick above them is the total of the numbers on the two bricks.

Glyn has already shown some of the numbers.

Fill in all the other numbers on the bricks.

[3]



.....

.....

.....

.....

.....

- (b) Hari caught a bus into town.
 His bus fare was £2.85.
 He had only £1 coins with him.
 The bus company's rules state that no change can be given.

In order to avoid losing any money, what coins should Hari make sure he has with him the next time he catches this bus?
 Give the shortest possible list of coins.

[1]

.....

.....

.....

.....

(c) You will be assessed on the quality of your organisation and communication in this part of the question.

In a factory which makes 'ready meals', 2205 kg of potatoes are used every day.

There are 9 different types of these meals that are made and each of these uses the same weight of potatoes.

What weight of potatoes is used to make 4 of the types of meals that are made each day?

[3 + OC 1]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

6. Solve the following equations.

(a) $17 + x = 35$ [1]

.....

.....

(b) $8x = 480$ [1]

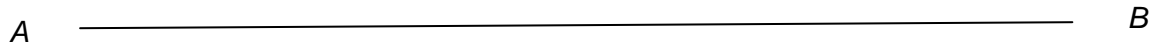
.....

.....

7. On the diagram, mark the point T with a cross so that

- $\angle TAB = 64^\circ$
- $AT = 7 \text{ cm.}$

[2]



8. (a) Circle either TRUE or FALSE for each statement given below.

[2]

STATEMENT		
A cuboid has 6 vertices.	TRUE	FALSE
A tetrahedron is a pyramid with 4 triangular faces only.	TRUE	FALSE
A cube has 12 equal edges.	TRUE	FALSE
A triangular prism has 3 rectangular faces.	TRUE	FALSE

(b) In the space below, draw **one** shape which has both

- rotational symmetry of order 3, **and**
- 3 lines of symmetry.

You must draw in the lines of symmetry.

[2]

9. Here are two sequences of numbers.
Some of the numbers have been left out of each sequence.
Fill in numbers to make correct sequences.
After each sequence, write down the rule used to find the next term in your sequence.

(a) 5,,, 14, [2]

.....

.....

.....

Rule

.....

(b) 40,,, 5, [2]

.....

.....

.....

Rule

.....

10. (a) Simplify the expression $9g - 5f - 2g + 3f$.

[2]

.....

.....

(b) Find the value of $3x + 4y$ when $x = -2$ and $y = 4$.

[2]

.....

.....

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

20 14 9 5 2

[2]

.....

.....

11. (a) Circle the correct answer for each of the following statements.

- (i) Helen has bought one of the eighty tickets sold in a raffle. The probability that Helen wins the top prize in the raffle is

$$\frac{1}{79}$$

1%

1:80

$$\frac{1}{80}$$

80%

[1]

- (i) One ball is selected at random from a box containing 5 blue balls, 4 red balls and 1 yellow ball. The probability that the selected ball is blue is

$$\frac{5}{5}$$

$$\frac{1}{2}$$

$$\frac{5}{41}$$

$$\frac{10}{5}$$

5%

[1]

- (b) A bag contains some red, green and black beads.

One bead is selected at random from the bag.

The probability of selecting a green bead from the bag is $\frac{1}{3}$.

Which of the following sets of beads could have been in the bag?

Circle the correct answer.

2 red 1 green 1 black	3 red 6 green 3 black	3 red 3 green 4 black	7 red 4 green 1 black	5 red 3 green 4 black
-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

[1]

12. Calculate 38% of 15.6.

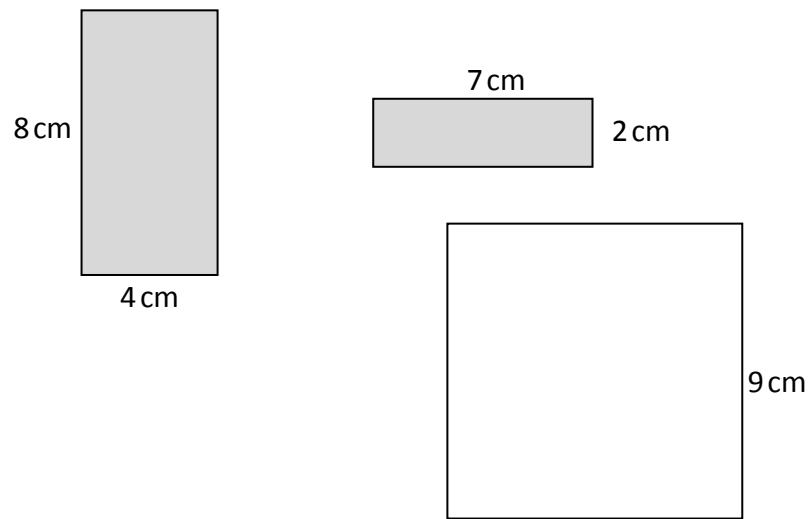
[2]

.....

.....

.....

- 13.** The two shaded rectangles shown below are to be drawn on a white, square card of side length 9 cm.
The two rectangles should not overlap.



Diagrams not drawn to scale

Show clearly how this can be done, and calculate the area of the square card that will be unshaded.

[4]

.....

.....

.....

.....

.....

.....

.....

.....

14. *You will be assessed on the quality of your accuracy in writing in this question.*

15. The diagram shows 2 identical parallelograms and the coordinates of four vertices. Find the coordinates of the vertices marked A , B and C .

[6]

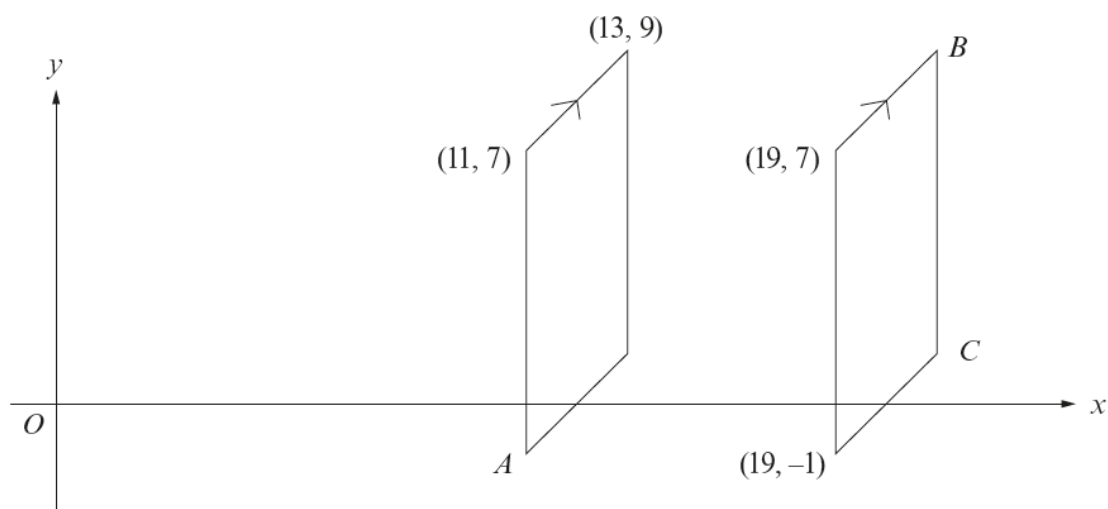


Diagram not drawn to scale

.....

.....

.....

.....

A (..... ,) B (..... ,) C (..... ,)

16. Calculate the average speed of a car which travelled 80 miles in 2 hours and 30 minutes.

[3]

.....

.....

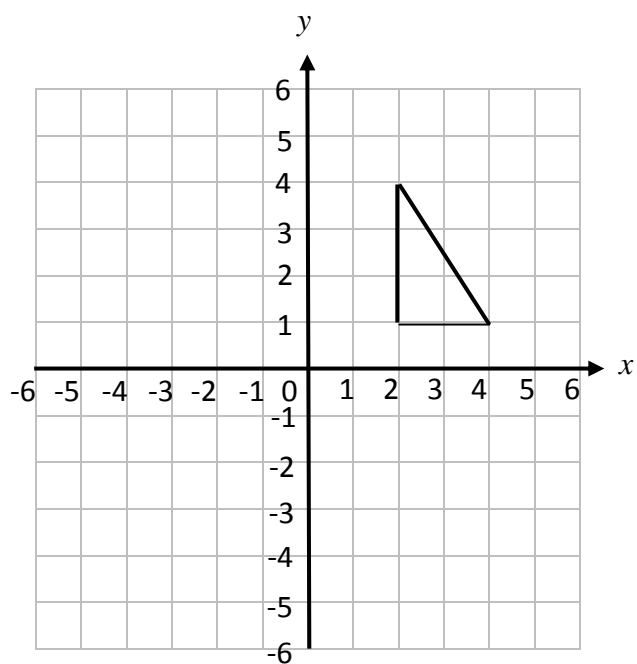
.....

.....

.....

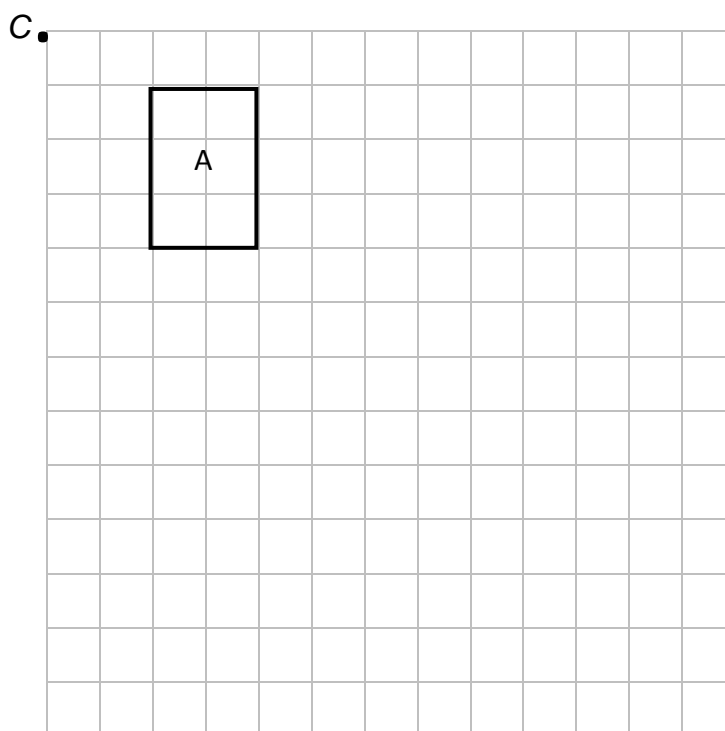
17. (a) Rotate the triangle 90° anticlockwise about the origin.

[2]



- (b) Enlarge rectangle *A* using centre *C* and scale factor 2.

[2]



END OF PAPER