

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

3300U20-1



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

THURSDAY, 6 JUNE 2019 – MORNING

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** the questions in the spaces provided.
If you run out of space, use the additional page at the back of the booklet. Question numbers must be given for all work written on the additional page.
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 **9**, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

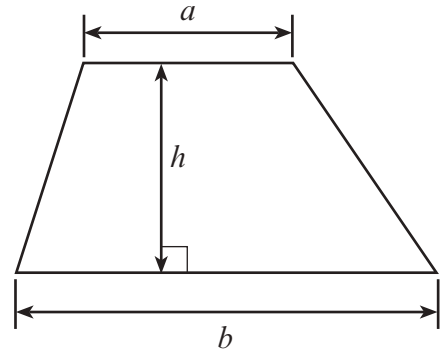
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	4	
2.	3	
3.	3	
4.	2	
5.	3	
6.	2	
7.	4	
8.	4	
9.	5	
10.	4	
11.	3	
12.	5	
13.	4	
14.	5	
15.	5	
16.	5	
17.	4	
Total	65	



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Formula List - Foundation Tier

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



1. Fill in the boxes below to make each calculation correct.

[4]

$$\boxed{9\text{p}} + \boxed{£4.58} = \boxed{£\dots\dots\dots}$$

$$\boxed{43\text{p}} + \boxed{£\dots\dots\dots} = \boxed{£6.27}$$

$$\boxed{12} \times \boxed{59\text{p}} = \boxed{£\dots\dots\dots}$$

$$\boxed{19} \times \boxed{£\dots\dots\dots} = \boxed{£27.55}$$

Space for working:

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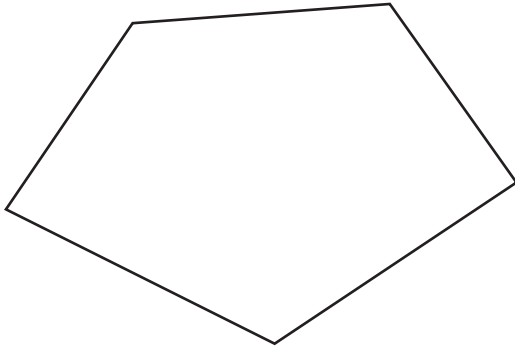
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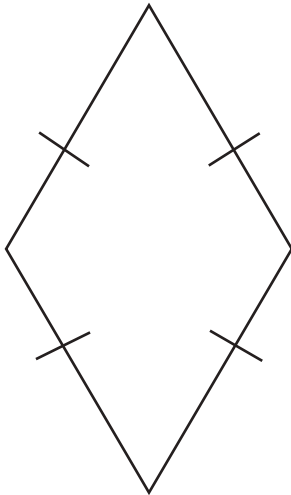
2. Write down the special name of each of the following.

(a)



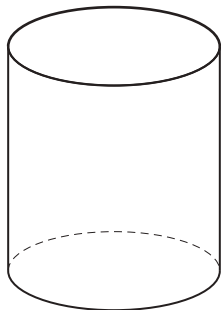
..... [1]

(b)



..... [1]

(c)



..... [1]



3. (a) Write down the first 3 multiples of 47. [1]

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.....

(b) One of the numbers below is a factor of 676.
Circle the correct number. [1]

22 32 42 52 62

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.....

(c) When one of the numbers below is divided by 22, there is a remainder of 11.
Circle the correct number. [1]

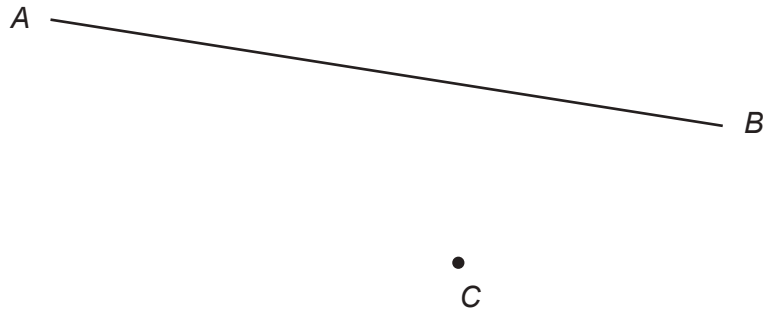
208 209 210 211 212

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4. A line AB is shown below.



(a) Mark the midpoint of AB with a \times . [1]

(b) Draw a line parallel to AB that passes through point C . [1]

5. (a) Bethan writes down two square numbers.

She adds her two numbers together.
Her answer is a square number less than 30.

Which two square numbers did Bethan write down? [2]

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Bethan's square numbers are and

(b) Harri adds three even numbers together and gets an answer of 23. [1]

Explain how you know that Harri's answer is incorrect.

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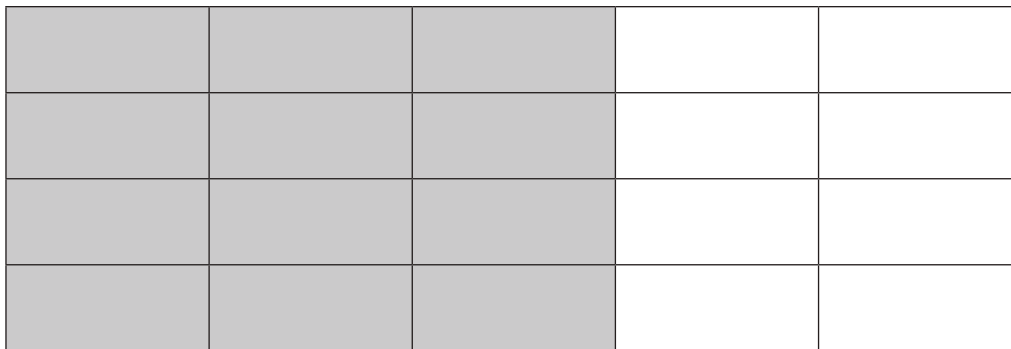
6. Circle either TRUE or FALSE for each statement given below.

[2]

STATEMENT		
The length of the diameter of a circle is equal to half the length of its radius.	TRUE	FALSE
A straight line connecting two points on the perimeter of a circle is a chord.	TRUE	FALSE
The circumference is the special name for the space inside a circle.	TRUE	FALSE
Two circles, each with radius 5 cm, must be congruent.	TRUE	FALSE

7. (a) What percentage of the following shape is shaded?

[2]



.....

 %

(b) You are given the value of 25% of a number.
 Explain how you can find the value of the number.

[1]

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(c) Explain how you know that $\frac{1}{8}$ is greater than $\frac{1}{10}$.

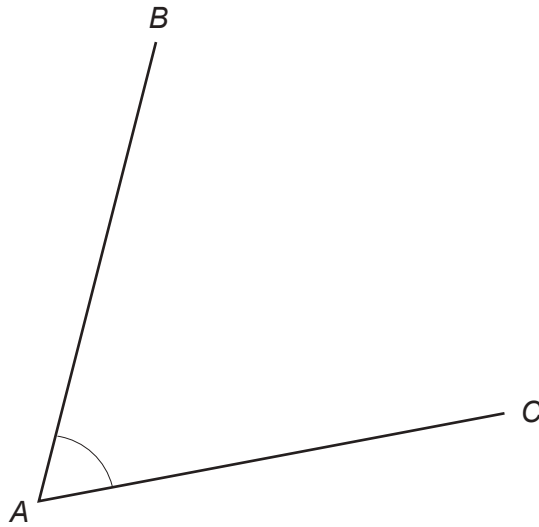
[1]

.....



8. (a) Measure \hat{BAC} .

[1]



$$\hat{BAC} = \text{.....}^\circ$$

- (b) One of the angles below is a reflex angle.
Circle the correct answer.

[1]

45°

90°

135°

180°

225°

- (c) The diagram below shows two angles on a straight line.
The large angle is 5 times the size of the small angle.
Find the size of each angle.

[2]

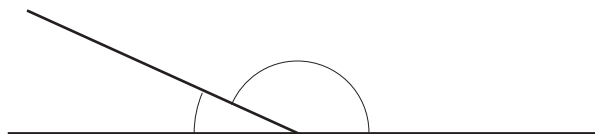


Diagram not drawn to scale

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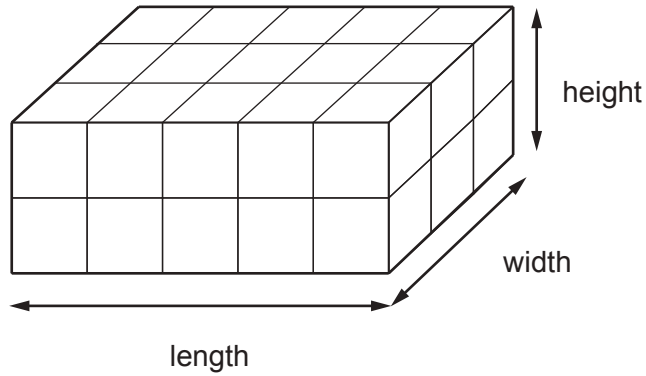
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Small angle =° Large angle =°



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

Cuboid A is made up of a number of cubes as shown below.
Each edge of each cube is 1 cm long.



A different cuboid, Cuboid B, has the same length and width as Cuboid A.
The height of Cuboid B is three times the height of Cuboid A.

What is the volume of Cuboid B?
You must show all your working.

[3 + 2 OCW]

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10. (a) Describe **in words** the rule for continuing each of the following sequences.

(i) 38, 32, 26, 20, ... [1]

Rule:

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(ii) $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, ... [1]

Rule:

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(b) (i) Adam has x marbles. His friend gives him 3 more.
Write down, in terms of x , the total number of marbles Adam now has. [1]

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(ii) Petrol costs $\text{£}g$ per litre.
Write down, in terms of g , the cost of 15 litres of petrol. [1]

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11. Calculate each of the following.

(a) $4 \cdot 8^2 + \sqrt{28 \cdot 09}$

[2]

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(b) $\frac{4}{9}$ of 78.3

[1]

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12. (a) Find the value of $5f + 7g$ when $f = 3.8$ and $g = -2.6$. [2]

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- (b) Solve the following equation.
Give your answer correct to 1 decimal place. [3]

$$7x - 4 = 12$$

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13. (a) Circle the longest time period from the list given below. [1]

180 minutes 4.5 hours 4 hours 45 minutes $4\frac{1}{4}$ hours $\frac{1}{6}$ th of a day

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(b) Circle the longest distance from the list given below. [1]

30000 mm 250 m 2 km 70 m 4000 cm 2.4 km

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(c) Circle either TRUE or FALSE for each statement given below. [2]

STATEMENT		
7 kilometres is less than 5 miles	TRUE	FALSE
1 kilogram is less than 2 pounds (lb)	TRUE	FALSE
1 litre is less than 1 pint	TRUE	FALSE
8 litres is less than 900 cm^3	TRUE	FALSE

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14. Catrin makes the following statement.

If you double the length of each side of a rectangle, you will double its perimeter and also double its area.

Is Catrin correct?

Show clearly, using an example, how you came to your decision.

[5]

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15. 18% of £256 is shared in the ratio 2 : 1.
Calculate the value of the larger share.
Give your answer to the nearest 10p.

You must show all your working.

[5]

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16. (a) The diagram shows two congruent triangles. The coordinates of each vertex are shown.

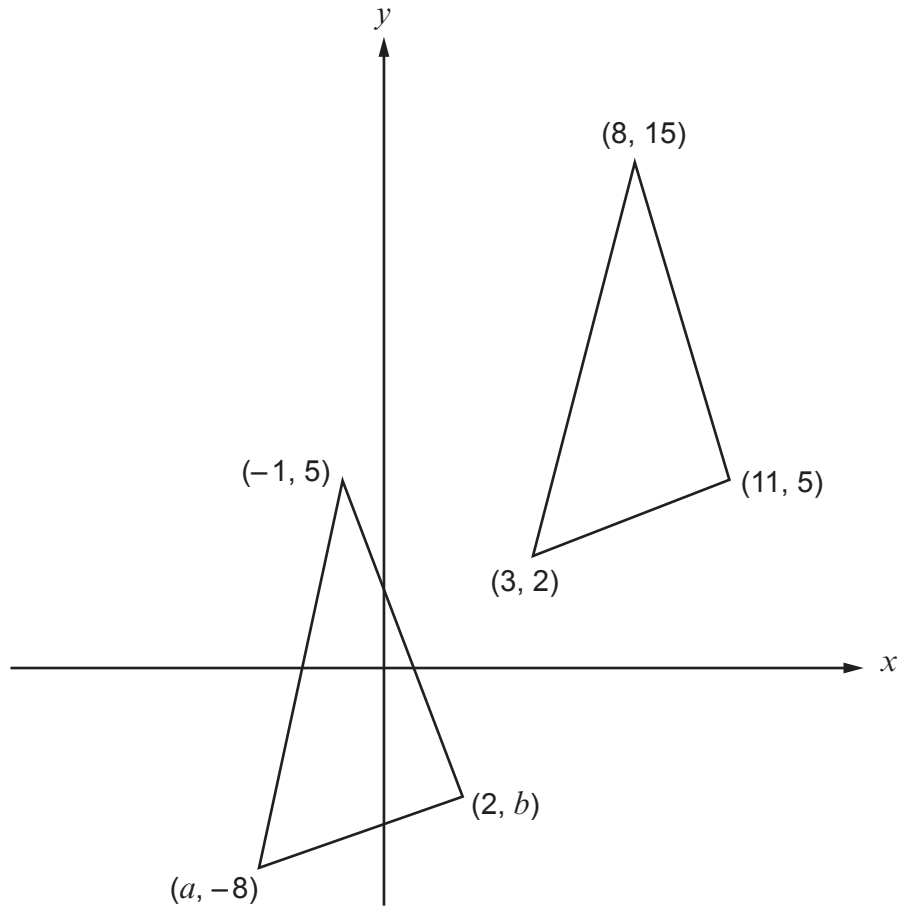


Diagram not drawn to scale

Find the value of a and the value of b .

[2]

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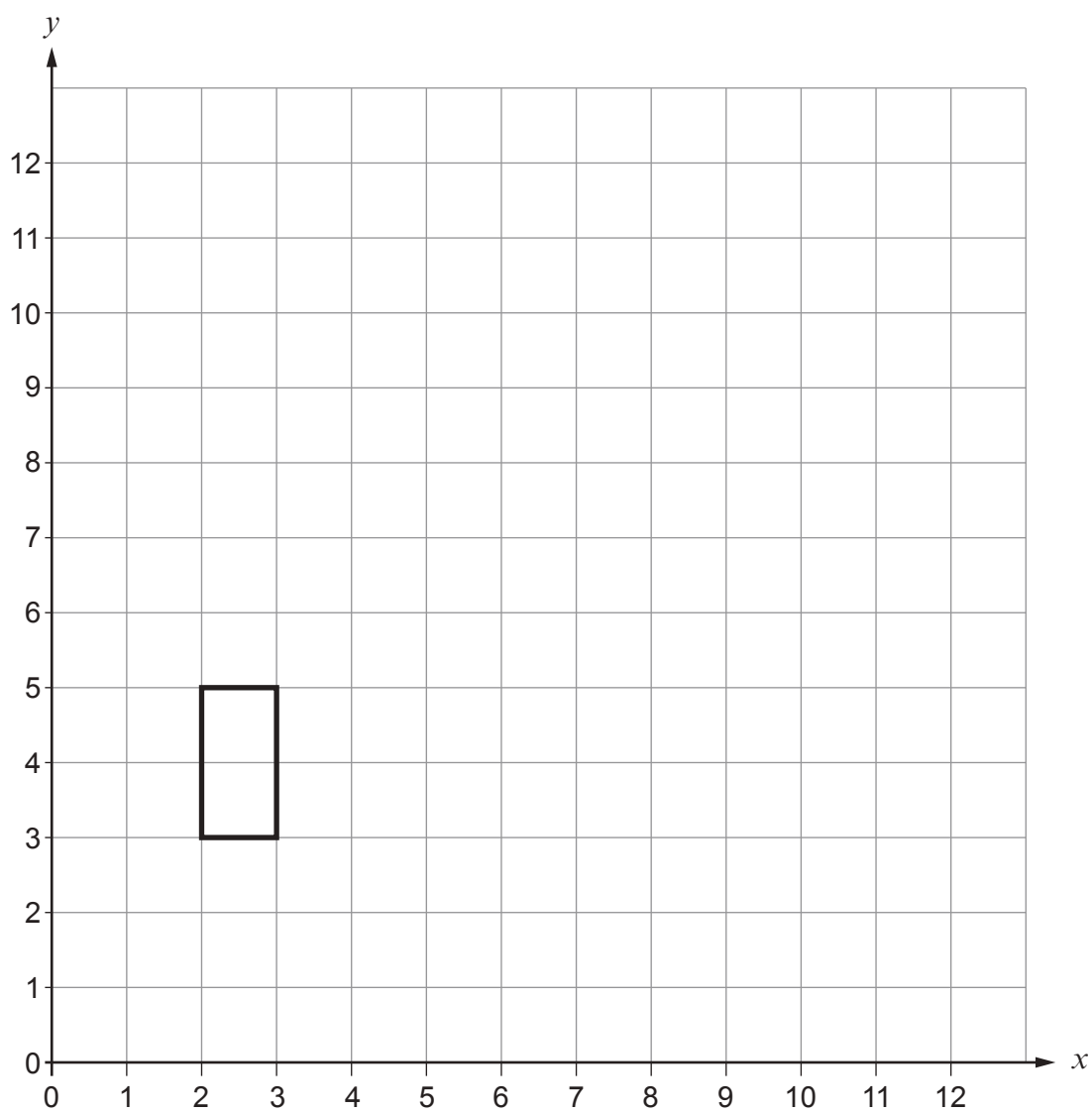
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$a =$

$b =$



- (b) Draw an enlargement of the rectangle below, using a scale factor of 3 and centre $(1, 2)$. [3]



17. Alison and Sarfraz play a game. They each have a different bag of cards.

Alison has the following cards in her bag.



Sarfraz has the following cards in his bag.



They each take a card at random from their own bag. They make a note of the letter, and return the card to the bag.

They each do this 100 times.

Who do you think is likely to choose the letter R more often?

Alison

Sarfraz

You must explain your decision and show all your working.

[4]



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