

Surname
Other Names

Centre Number

Candidate Number
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GCSE – **NEW**

3300U10-1



A16-3300U10-1

MATHEMATICS
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

TUESDAY, 8 NOVEMBER 2016 – MORNING

1 hour 30 minutes

ADDITIONAL MATERIALS

The use of a calculator is not permitted in 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 continuation page at the back of the booklet, taking care to number the question(s) correctly.
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 4, 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.	2	
3.	2	
4.	5	
5.	2	
6.	2	
7.	5	
8.	2	
9.	4	
10.	2	
11.	2	
12.	6	
13.	3	
14.	3	
15.	5	
16.	5	
17.	5	
18.	3	
19.	3	
Total	65	

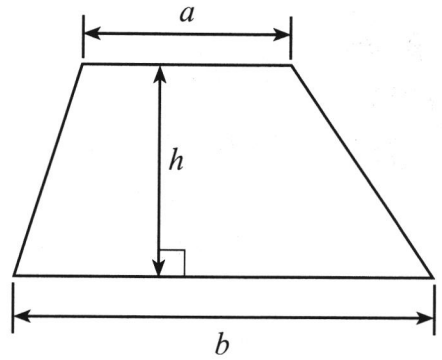
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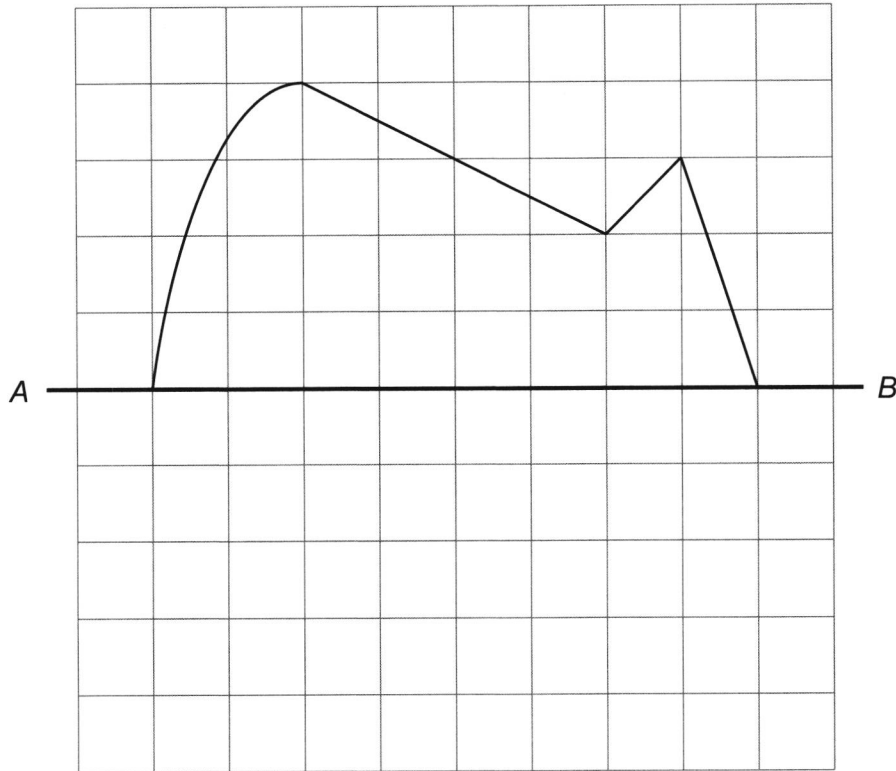
Formula List - Foundation Tier

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



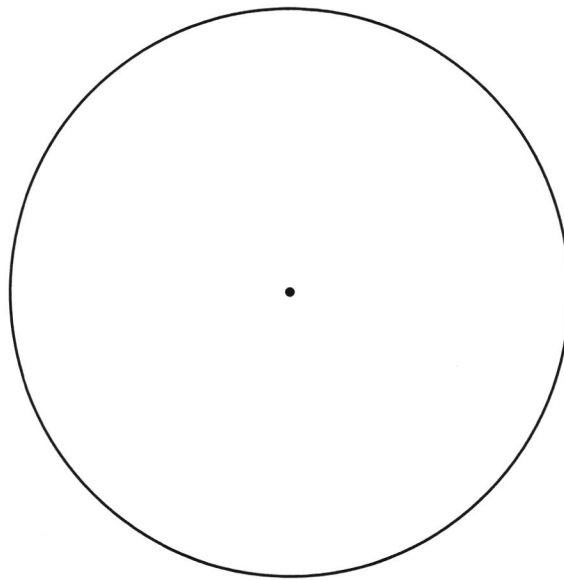
1. (a) Draw a reflection of this shape in the line AB .

[2]



- (b) Measure the length of the radius of this circle using metric units. State the units you are using.

[2]



Radius =



2. (a) Huw has 19 coins in his pocket.
13 of these coins are 10p coins and the rest are 5p coins.
Huw chooses one coin at random from his pocket.

Circle the best expression from those given below to describe the chance that Huw chooses a 5p coin. [1]

impossible unlikely an even chance likely certain

- (b) Catrin has 10 pieces of fruit in her bag.
She has 4 oranges and 6 apples.

Catrin chooses one piece of fruit at random from her bag.

Circle the best expression from those given below to describe the chance that Catrin chooses a banana from her bag. [1]

impossible unlikely an even chance likely certain

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3. (a) Kate thought of a number.
She multiplied her number by 9 and got the answer 54.

What number did Kate think of? [1]

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- (b) Write a **positive whole number** in each empty box to make this statement true. [1]

$$\boxed{} \times \boxed{8} + \boxed{} = \boxed{21}$$

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

A square is made using four rods of equal length joined end to end.

The perimeter of this square is 72 cm.

Three of these rods are now joined end to end to make an equilateral triangle.

What is the perimeter of this equilateral triangle?

You must show all your working.

[3 + 2 OCW]

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5. Solve the following equations.

(a) $20x = 120$

[1]

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(b) $40 - y = 25$

[1]

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6. Arjuna has the 10 cards shown below.

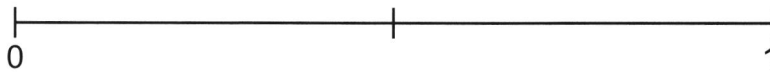


He puts the cards in a box and then chooses one at random.

On the probability scale shown below, mark the points A and B where:

- A is the probability of Arjuna choosing a number that is greater than 16,
- B is the probability of Arjuna choosing a number that is less than 20.

[2]

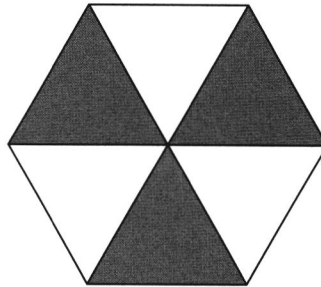
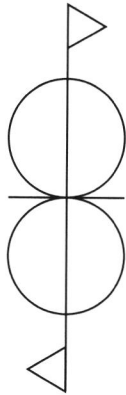


Number of empty chairs =



8. Write down the order of rotational symmetry for each of the following.

[2]



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9. (a) The point A is plotted on the grid below.

Write down the coordinates of A

[1]

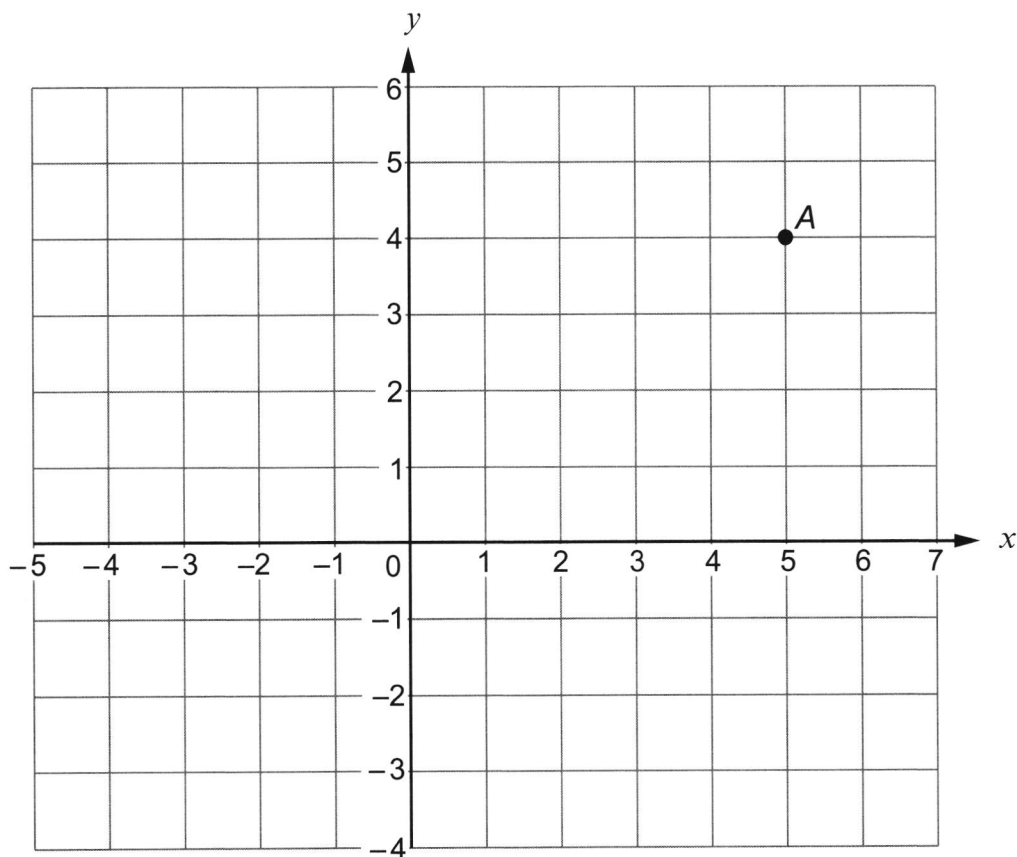
- (b) Plot the points $B(5, -2)$ and $C(-3, -2)$ on the grid.

[2]

- (c) $ABCD$ is a rectangle.

Write down the coordinates of D

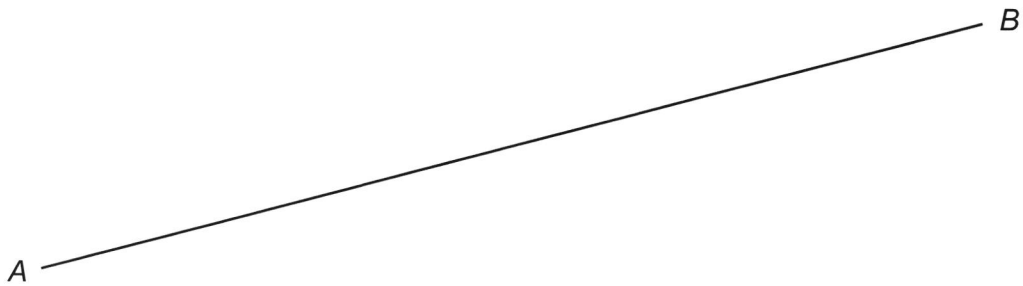
[1]



10. On the diagram, mark the point P with a cross so that

- $\widehat{BAP} = 74^\circ$
- $AP = 6.5 \text{ cm.}$

[2]



11. Find the size of angle x .

[2]

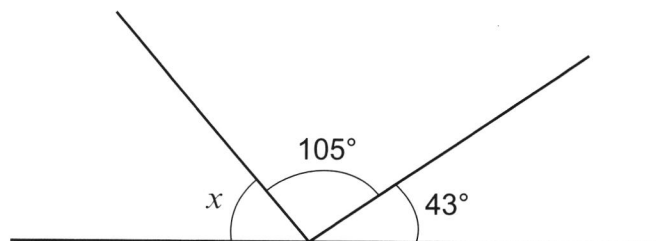


Diagram not drawn to scale

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$x = \text{.....}^\circ$



12. Calculate each of the following.

(a) 0.4×0.7

[1]

(b) $13.8 - 7.45$

[1]

(c) $3^3 - 2^4$

[2]

(d) $\frac{9}{10} - \frac{3}{5}$

[2]



13. Circle either TRUE or FALSE for each of the following statements.

[3]

20% of 70 is the same as 70% of 20.	TRUE	FALSE
$\frac{1}{2}$ of $\frac{1}{8}$ is the same as $\frac{1}{8}$ of $\frac{1}{2}$	TRUE	FALSE
A number is halved. The answer is halved, and then this answer is halved again. This gives the same answer as dividing the original number by 6.	TRUE	FALSE
Dividing a number by 15 is the same as first dividing by 10 and then dividing the answer by 5.	TRUE	FALSE
Multiplying a number by 2.5 is the same as first multiplying by 10 and then dividing the answer by 4.	TRUE	FALSE

Space for working:

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14. A shop has 31 plant pots.
Some are blue, some are yellow and the rest are red.
There are five more blue pots than yellow pots.
There are four times as many blue pots as there are red pots.

Calculate how many pots there are of each colour.

[3]

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Blue

Yellow

Red

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

[2]

33 26 19 12

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- (b) Solve the equation $13y - 5 = 9y + 27$.

[3]

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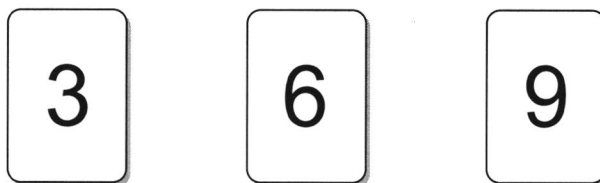
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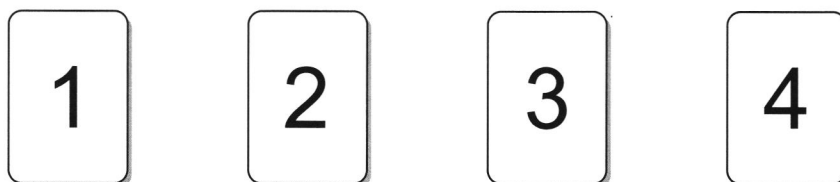
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16. Three **red** cards have the following numbers written on them.



Four **green** cards have the following numbers written on them.



In a game, the cards are turned face down.
A player chooses one red card and one green card at random.
The player's score is the sum of the two numbers.

(a) Complete the following table.

[1]

		Score			
Red card	9	11
	6	8
	3	4	5	6	7
		1	2	3	4
		Green card			

(b) A player wins a prize if the score is **more** than 9.
Safira plays the game once. What is the probability that she wins a prize?

[2]

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(c) 60 people play the game once.
Approximately how many people would you expect to win a prize?

[2]

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- The diagram shows a right-angled trapezium $ABCD$ with a rectangle $ADEB$ inscribed within it. The top base of the trapezium is EC , with a total length of 15 cm . The bottom base is AB , with a length of 9 cm . The height of the trapezium is 8 cm . The vertices are labeled A (bottom-left), B (bottom-right), C (top-right), and D (top-left of the triangle). The rectangle's vertices are A , E , D , and B .

Calculate the area of the right-angled triangle.
You must show your working.

[5]



18. Two types of number are added or multiplied together.
Complete the table below to show whether the answer will be odd or even.
One answer has been filled in for you.

[3]

Calculation:	Answer will be:
even number + even number	even
even number + odd number	
odd number + odd number	
even number \times even number	
even number \times odd number	
odd number \times odd number	



19. Write down five numbers that satisfy all of the following conditions:

- They are all between 1 and 9 inclusive.
- They have a median value of 6.
- They have a range of 7.
- Their mean is 5.

[3]

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