

Surname	Centre Number	Candidate Number
First name(s)		0



**GCSE**

3310U10-1



**TUESDAY, 2 NOVEMBER 2021 – MORNING**

**MATHEMATICS – NUMERACY  
UNIT 1: NON-CALCULATOR  
FOUNDATION TIER**

1 hour 25 minutes

**ADDITIONAL MATERIALS**

The use of a calculator is not permitted in this examination.  
A ruler, a 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 the work written on the additional page.

Take  $\pi$  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 3(b), 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.	5	
2.	11	
3.	11	
4.	5	
5.	3	
6.	6	
7.	6	
8.	7	
9.	6	
<b>Total</b>	<b>60</b>	

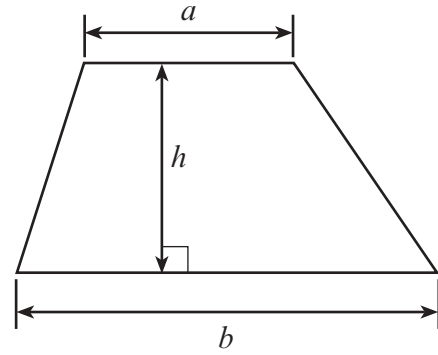
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**Formula List – Foundation Tier**

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

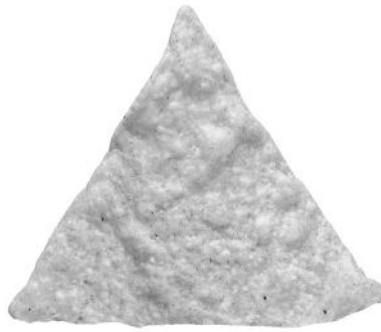


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1. *Amazing Snacks* makes tortilla chips, as shown in this picture.



- (a) This tortilla chip has 3 sides of equal length.  
What is the name of a triangle that has 3 sides of equal length?  
Circle your answer.

[1]

scalene

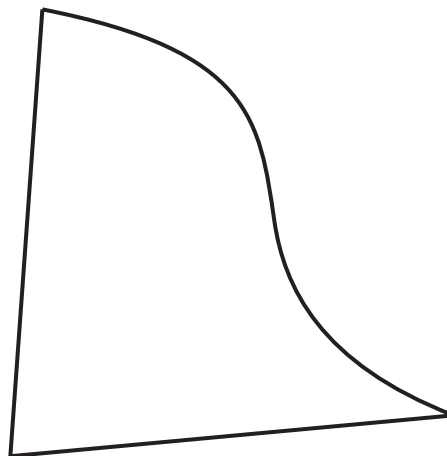
isosceles

right-angled

equilateral

quadrilateral

- (b) Maisie has been asked to design a new shape of chip.  
One of her designs is shown below.



Maisie thinks that the angle between the two straight edges is an obtuse angle.  
Do you agree?

You must use the diagram to give a reason for your answer.

[1]

Yes

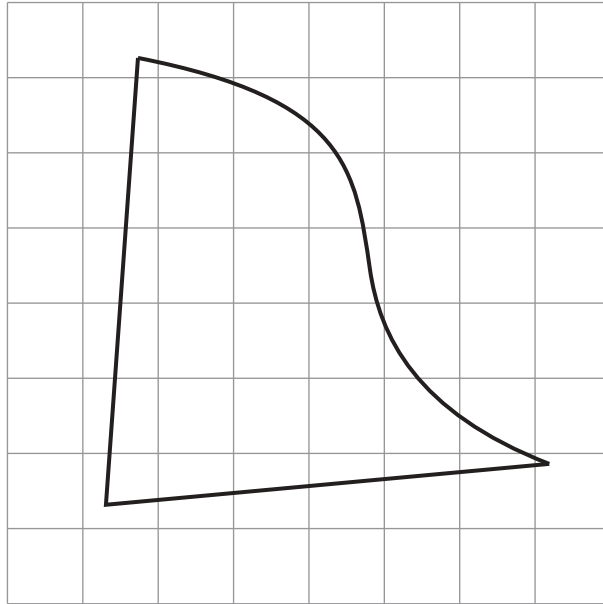
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(c) Maisie's design is shown on the centimetre-squared grid below.



The face of one of the original chips has an area of  $13\text{ cm}^2$ .

Maisie thinks her new design has a greater area than the original.

Decide whether or not Maisie is correct.  
You must show all your working.

[3]

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2. The table below shows the number of swimming medals won by 5 countries in the 2018 Gold Coast Commonwealth Games.

One entry is missing.

Country	Gold	Silver	Bronze	Total
England	9	10	5	24
South Africa	6	3	3	12
Canada	3		6	20
New Zealand	2	0	1	3
Wales	1	1	3	5

- (a) (i) Complete the table to show the number of Silver medals won by Canada. [1]

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
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- (ii) Which country had a quarter of the total number of medals won by Canada? [1]

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- (b) Draw a pictogram to represent the total number of medals won by each of the 5 countries. [4]









KEY:  to represent 4 medals

Country	



- (c) Before 2018, the world record for the 100 metres breaststroke was 57.13 seconds. During 2018, Adam Peaty beat this world record by 3 hundredths of a second. What was the new world record? [2]
- .....
- .....

- (d) Alys Thomas, from Wales, won a Gold medal in the 200 metres butterfly final. Her reaction time was 0.73 seconds and her total time was 2 minutes and 5.45 seconds. The results for the race are shown below.

Results						
Position	Lane	Name	Reaction time (in seconds)	Total time (in minutes and seconds)		
1	4	 WAL Alys THOMAS	0.73	2:05.45		
2	5	 AUS Laura TAYLOR	0.68	2:07.39		
3	6	 AUS Emma MCKEON	0.73	2:08.05		
4	7	 IOM Charlotte ATKINSON	0.70	2:08.50		
5	2	 AUS Brianna THROSSELL	0.68	2:08.82		
6	3	 CAN Mabel ZAVAROS	0.70	2:09.20		
7	8	 ENG Emily LARGE	0.68	2:10.96		
8	1	 ENG Laura STEPHENS	0.68	2:11.46		

- (i) What is the difference in the total time between 1st and 2nd place? [2]
- .....
- .....
- .....

- (ii) What was the modal reaction time? [1]
- .....



3. Mona and Rob shop online and have their weekly shopping delivered to their house.

(a) One day, Mona writes the following shopping list and does not check the quantities.

Place a 'x' by the items that do not appear to have a sensible quantity.  
Place a '✓' by those that do.

One has been completed for you.

[3]

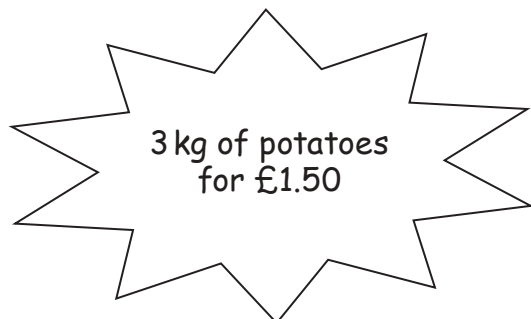
Item	Quantity	x or ✓
Orange squash	1 litre	
A bag of apples	1 kilogram	
A bag of sugar	70 kilograms	
A large bag of crisps	150 grams	
Milk	20 millilitres	
A bag of rice	500 grams	✓
A bottle of shampoo	9 litres	
A large bar of chocolate	200 kilograms	







- (c) Rob visits the local shops to buy potatoes.  
He sees these two offers.



Explain fully which offer is the better buy.  
You must include an appropriate calculation.

[2]

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4.



The prices for cupcakes at two different bakeries are shown below.

<i>Carol's Cakes</i>
2 cupcakes for £5.00

<i>Icing Top Cakes</i>
3 cupcakes for £8.40

For a birthday party, Maldwyn needs 12 cupcakes.

How much will Maldwyn save by buying the 12 cupcakes from *Carol's Cakes* rather than from *Icing Top Cakes*?

You must show all your working.

[5]

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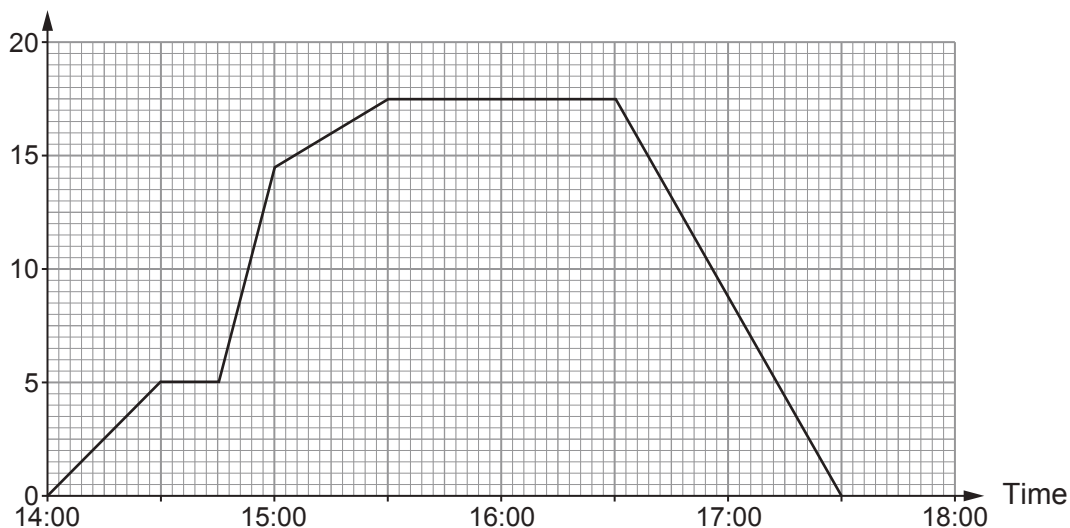
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5. Dean went to the gym yesterday afternoon.  
The graph shows the distance Dean was from home during yesterday afternoon.

Distance from home (km)



- (a) How far away from home was Dean at 15:15?  
Circle your answer. [1]

15.5 km      15 km      16.5 km      16 km      17 km

- (b) At what time did Dean arrive back home?  
Circle your answer. [1]

5:30 p.m.      5:30 a.m.      5:15 p.m.      5:10 p.m.      5:00 a.m.

- (c) Circle the term below that best completes the statement. [1]

"Looking at the travel graph, it is ..... that Dean stopped for more than ten minutes on the way to the gym."

very unlikely      unlikely      impossible

an even chance      very likely

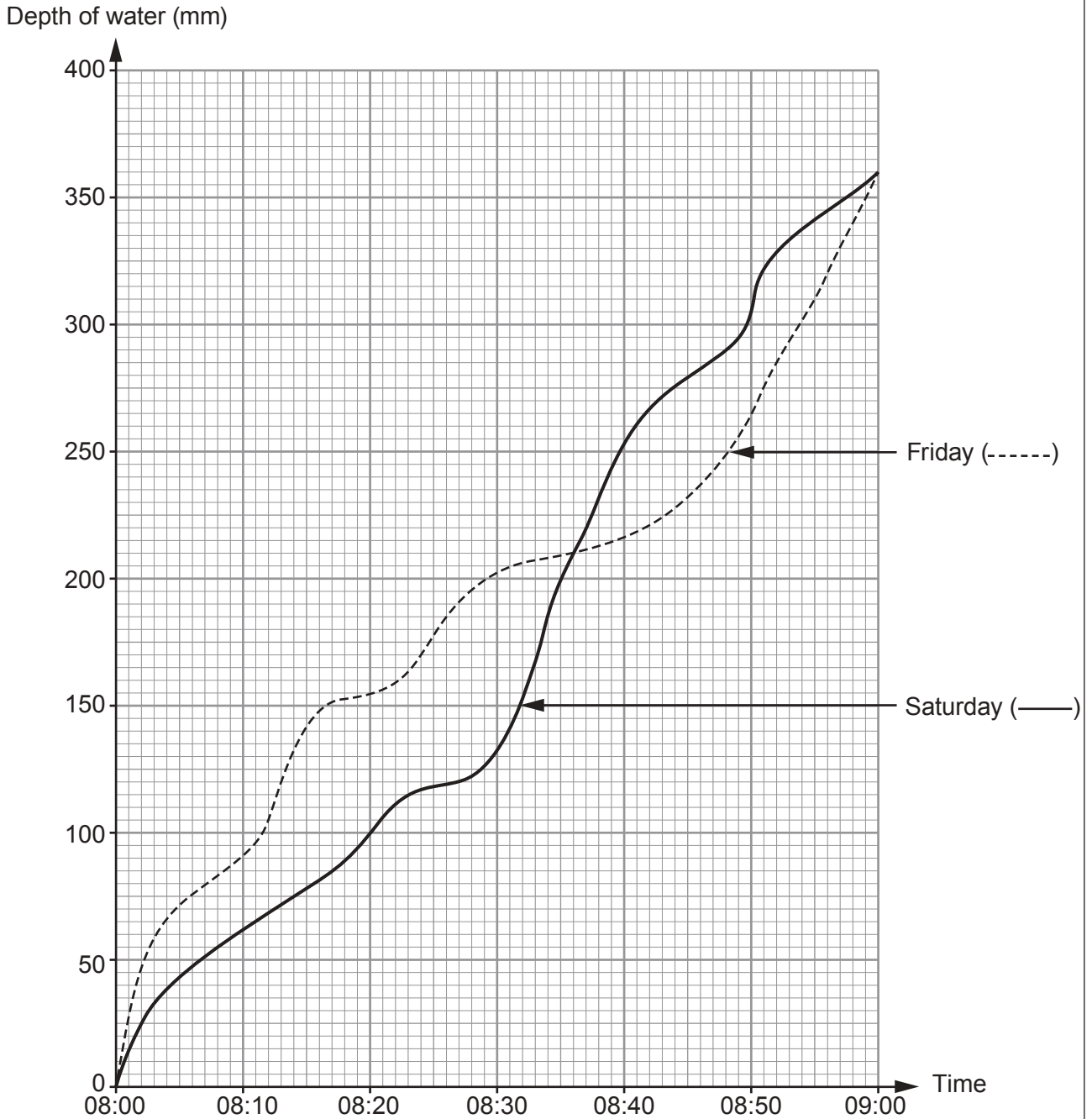


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6. A water tank is filled every morning. The graph below shows the depth of water in the tank between 8:00 a.m. and 9:00 a.m. on Friday and Saturday.



- (a) What was the difference between the depth of water on Friday and on Saturday at 8:20 a.m.?

[2]

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- (b) On both days, the tank filled with water to a depth of 360 mm.  
On which day did this happen more quickly?

Friday  Saturday  The same for both days

You must give a reason for your answer. [1]

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- (c) Consider the time interval between 8:10 a.m. and 8:50 a.m.  
At what time was the depth of the water in the tank the same on both Friday and Saturday? [1]

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- (d) On which day did the water tank fill more quickly between 8:30 a.m. and 8:40 a.m.?

Friday  Saturday  Can't tell

You must give a reason for your answer. [1]

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- (e) The tank can hold water to a depth of 400 mm.  
On Saturday, at what time was the water in the tank **half** this depth? [1]

8:28 a.m.      8:20 a.m.      8:35 a.m.      8:12 a.m.      8:30 a.m.

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(b) Dafydd wants to learn to play the saxophone.

Saxophone lessons will cost him a total of £300.  
He needs to pay a deposit of £18 to book the lessons.



What percentage of the total cost of the lessons is the deposit?

[2]

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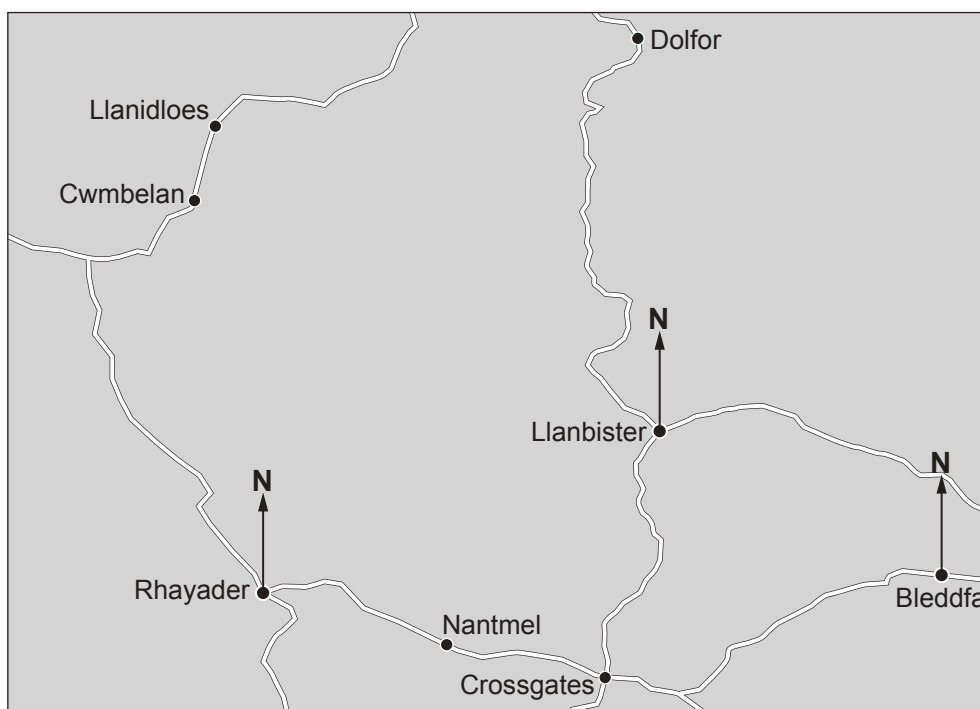


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A large rectangular area with a solid black border, containing 20 horizontal dotted lines for writing.



9. Use this section of a map of Wales to answer this question.  
The map is drawn to scale.



(a) Complete each of the following statements.

(i) 'The bearing of Llanbister from Rhayader is .....°.' [1]

(ii) 'The bearing of Bleddfa from Llanbister is .....°.' [1]

(b) Cwmbelan is 2 miles from Llanidloes.

Sioned travelled from Rhayader to Crossgates in 30 minutes.

Calculate her approximate average speed.

Give your answer in miles per hour (mph).

You must show all your working.

[4]

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