

Surname	Centre Number	Candidate Number
First name(s)		0



GCSE

3310U40-1



S25-3310U40-1

WEDNESDAY, 4 JUNE 2025 – MORNING

**MATHEMATICS – NUMERACY
UNIT 2: CALCULATOR-ALLOWED
INTERMEDIATE TIER**

1 hour 45 minutes

ADDITIONAL MATERIALS

A calculator will be required for this paper.

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** 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 2, 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.	3	
2.	10	
3.	5	
4.	2	
5.	4	
6.	7	
7.	8	
8.	3	
9.	3	
10.	9	
11.	3	
12.	14	
13.	9	
Total	80	

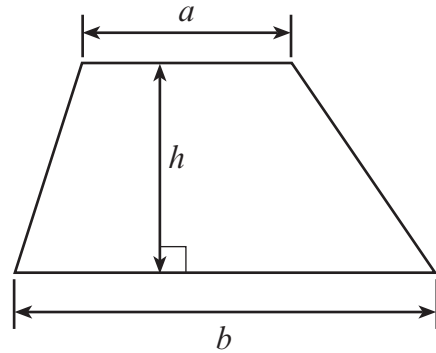
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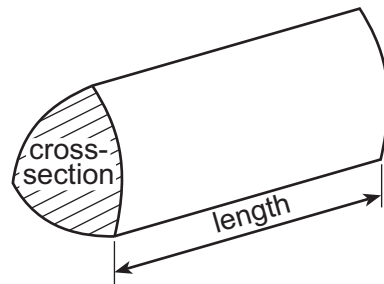
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Formula List – Intermediate Tier

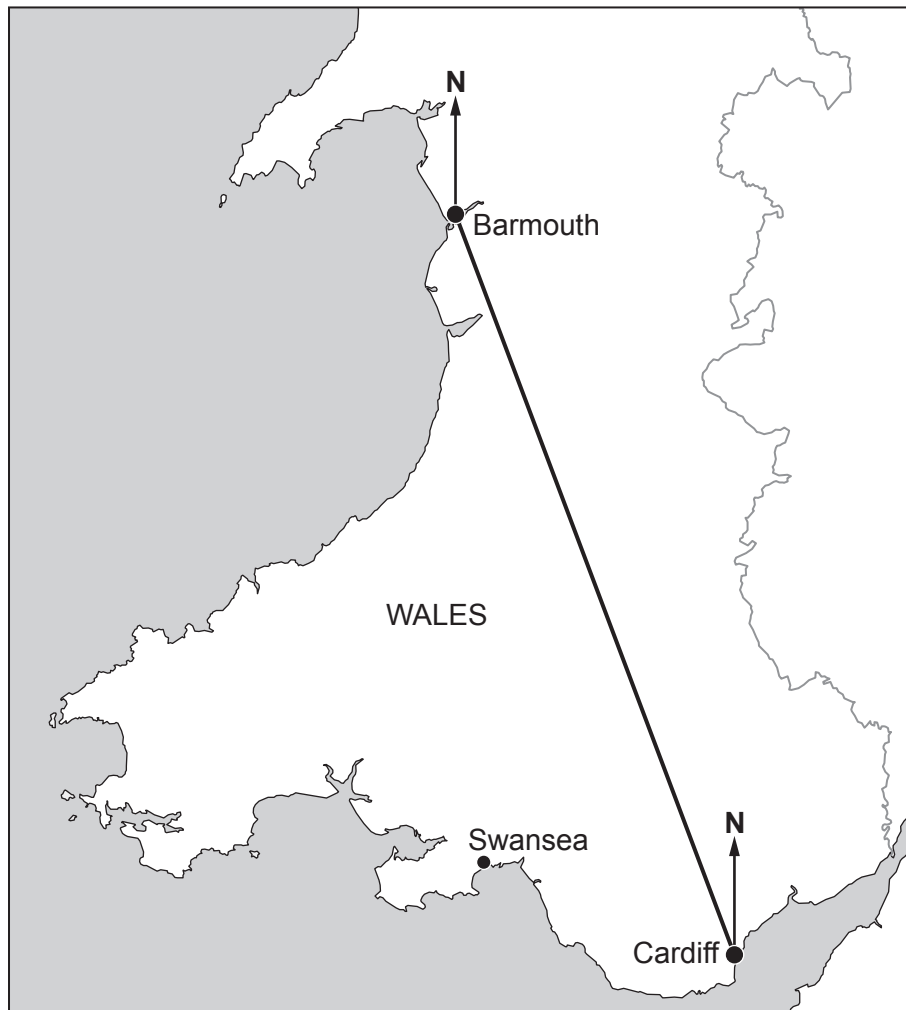
Area of trapezium $= \frac{1}{2}(a + b)h$



Volume of prism $= \text{area of cross-section} \times \text{length}$



1. A helicopter flies from Barmouth to Cardiff, as shown on the map below.



- (a) What is the bearing of Cardiff from Barmouth?

[1]

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- (b) The average speed of the helicopter is 152 km per hour.
The journey takes 1 hour.
How many **miles** is Barmouth to Cardiff by helicopter?

[2]

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Barmouth to Cardiff is miles



4 friends are planning a camping holiday for 5 nights at Maes Hyfryd.

£24.50 per tent per night

a fee of £6 per person staying per night

22% off the fee per person when 4 people stay in the same tent

- take two tents, so that 2 people sleep in each tent or
- take one tent that all 4 friends can share.

- the total charge for staying for 5 nights if the 4 friends use two tents and
- the saving made if the friends decide to use just one tent.

[8 + 2 OCW]





3. Emir uses this recipe to make chocolate mousse.

Recipe for Chocolate Mousse

Serves 4 people

84g dark chocolate

16g cocoa powder

50g yoghurt

10g sugar

- (a) Emir is making chocolate mousse to serve 18 people.

Complete the following list of the quantities of ingredients that he needs.

[3]

..... g dark chocolate

..... g cocoa powder

..... g yoghurt

..... g sugar

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- (b) Express the following ratios in their simplest terms.

[2]

yoghurt : sugar = ... :

dark chocolate : cocoa powder = ... :

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4. The information below is shown on a bottle of sun cream:

One application of sun cream is 1 ounce.
Use 2 milligrams of sun cream to cover an area of 1 cm^2 of skin.

Use: $1 \text{ ounce} \approx 28\,350 \text{ milligrams}$



Use this information to calculate the area of skin covered by one application of sun cream.
Give your answer in cm^2 .

[2]

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5. New roads are being built in a town.
The plan below shows the roads and the size of some of the angles between them.

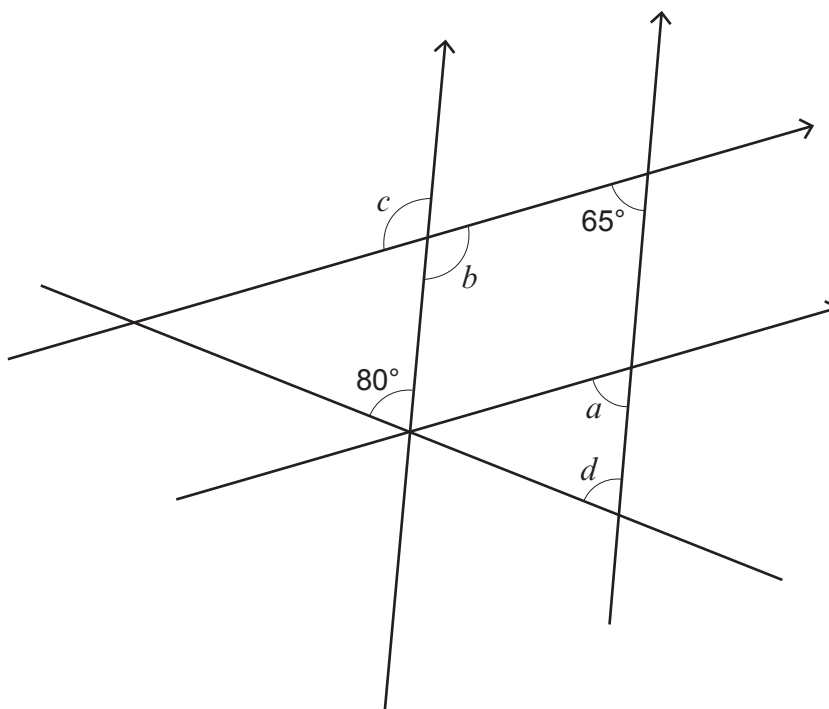


Diagram not drawn to scale

Calculate the size of each of the angles a , b , c and d .

[4]

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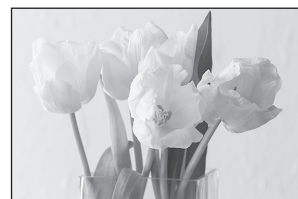
$a = \dots\dots\dots^\circ$ $b = \dots\dots\dots^\circ$ $c = \dots\dots\dots^\circ$ $d = \dots\dots\dots^\circ$



6. Nina sells flowers.

- (a) At the start of last week, Nina spent £600 buying flowers to sell.

By the end of the week, she had taken £1140 from the sale of the flowers.



Calculate Nina's percentage profit from the sale of these flowers.

[2]

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- (b) Nina wants to display her flowers.
She buys two glass vases from a website.
The two vases are different shapes.



Cuboid



Cylinder

Diagrams not drawn to scale

Each vase can hold 1648 cm^3 of water when it is full.

- (i) The vase in the shape of a cuboid has a base measuring 10 cm by 8 cm.
Calculate the height of this vase.

[2]

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- (ii) The radius of the base of the cylindrical vase is 6 cm.

The website states that both of these vases have the same height.
Is the website correct?

You must show all your working.

[3]

The website is correct

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The website is incorrect

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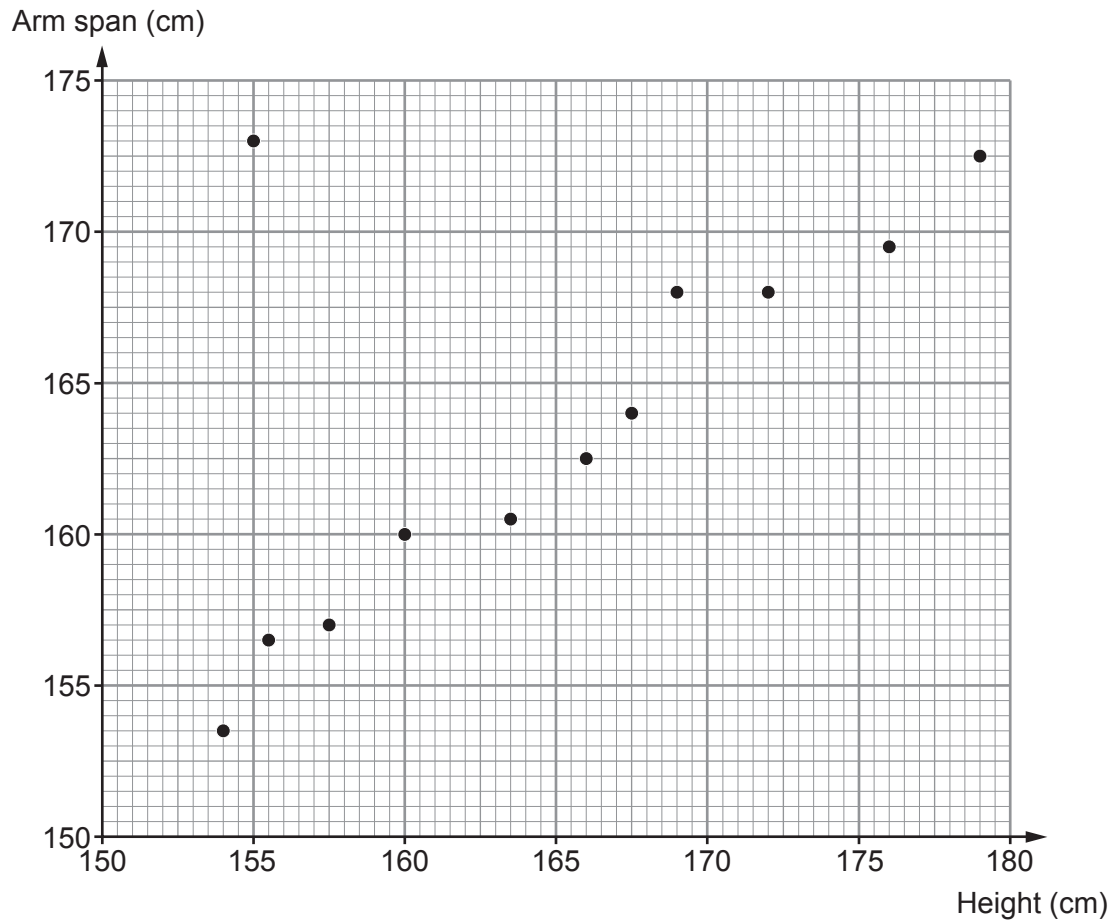
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7. In a PE lesson, 12 students each measured their height and arm span. The results are shown on the scatter diagram below.



- (a) Anwen is the only student who made an error in her measurements. She is one of the shortest students.

What did Anwen record as the measurement for her arm span?
Circle your answer.

[1]

155 cm 168 cm 173 cm 172.5 cm 178 cm



- (b) If you ignore Anwen's height, what is the median height of the other 11 students? [1]

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Median height is cm

- (c) What term best describes the correlation between a student's height and their arm span? [1]

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- (d) Megan has the same arm span as Elwyn.
Elwyn is taller than Megan.
How tall is Megan? [2]

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Megan is cm tall

- (e) Roland is 160 cm tall.
Elsa is 10% taller than Roland.
Find Elsa's height and arm span. [3]

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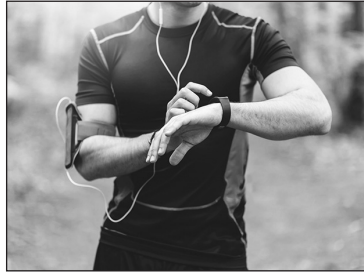
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Elsa's height is cm

Elsa's arm span is cm



8.



Elfed goes to the park to exercise.

Yesterday he ran 10 km and then walked a further 4 km.
Elfed ran for 45 minutes and walked for 1 hour.

What was Elfed's overall average speed for his exercise in the park yesterday?
Give your answer in km/h.
You must show all your working.

[3]

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9. Bethan bought a house in January 2000 for £30 000.

In the first 10 years, her house increased in value each year by 6% of its previous year's value.
In the following 15 years, her house increased in value each year by 11% of its previous year's value.

Calculate the value of Bethan's house in January 2025.

[3]

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10. 100 people took part in a fundraising event last Saturday and Sunday. They raised money for charity by working towards some fitness targets.

- (a) The target for Saturday was to achieve a mean of 6500 steps per person.

The results for Saturday are shown in the table below.



Number of steps	Number of people
3001 to 5000	22
5001 to 7000	30
7001 to 9000	42
9001 to 11 000	6

- (i) Calculate an estimate of the mean number of steps per person on Saturday to show that this target was met. [4]

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- (ii) Osian says,

"None of these 100 people recorded more than 10 000 steps on Saturday."

Is this statement certainly true, not true, or is it not possible to tell?

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

Certainly true ☐ Not true ☐ Not possible to tell ☐

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- (b) On Sunday, the 100 people were divided into three groups, A, B and C, based upon their results from the Saturday.
Each group was given a target of a mean number of steps per person.

The targets for groups A, B and C were 8000, 9000 and 10 000 steps, respectively.

The table below shows the mean number of steps per person that each group achieved on Sunday.

Group	A	B	C
Mean number of steps per person achieved	5802	9830	12 200

The ratio of the number of people in the different groups was $A : B : C = 18 : 4 : 3$.

- (i) Calculate the overall mean of the number of steps taken per person by these 100 people on Sunday.

[3]

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- (ii) The organiser says,

"A fabulous result on Sunday! Two of the three groups met their target.
This means that two-thirds of the targets given were met."

Give a reason why this could be seen as a misrepresentation of the outcome of Sunday's fundraising event.

[1]

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11. A builder wants to put a ladder safely against a wall. The builder should follow the '4 up, 1 out' rule. This means that, for every 4 units of height up the wall that the top of the ladder reaches, the base of the ladder should be 1 unit away from the wall.

The diagram below shows a ladder placed safely against a vertical wall.

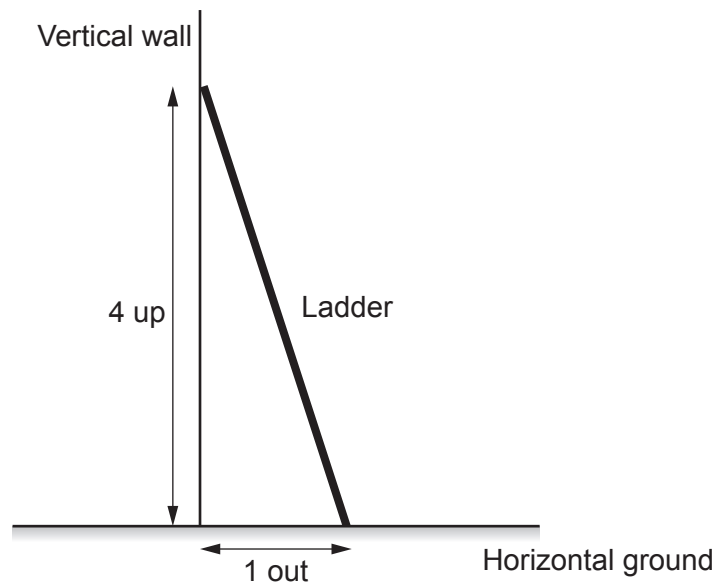
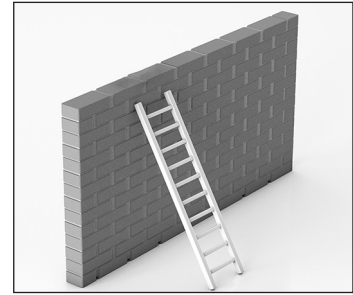


Diagram not drawn to scale

Calculate the angle between the horizontal ground and the ladder.

[3]

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12. Gwilym is giving a talk about the amount of food that was wasted in 2019.

(a) In 2019, the world produced 931 million tonnes of food waste.

Of this:

- 569 million tonnes was from households
- 243 million tonnes was from food services
- 119 million tonnes was from retail sectors.

Gwilym wants to draw a pie chart to display this information.

Complete the table below.

Then complete Gwilym's pie chart.

You must show all your working.

[4]

Food waste	Angle in a pie chart
Household	220°
Food service	°
Retail sector	°

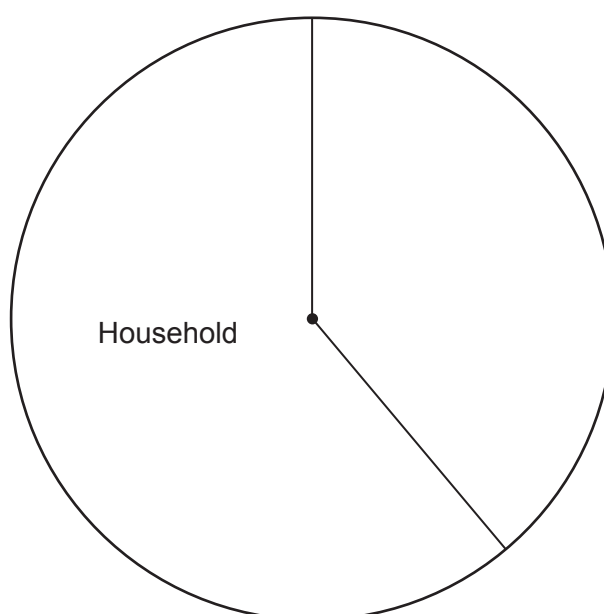
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Food waste in 2019



Gwilym has found some further details of food waste in 2019.

Country	Total food waste in kilograms	Population
China	91 646 213 000	1 440 000 000
France	5 522 358 000	65 400 000
United Kingdom	5 199 825 000	67 600 000

- (b) (i) The population data seems to be given correct to a certain number of significant figures.
To how many significant figures does the data seem to be given?
Circle your answer. [1]

Three One Ten Eight Two

- (ii) Use the data from the table above to complete the following statements.
You must show all your working. [4]

'On average, a person in France produced kilograms of food waste.

This was times the average amount of food waste per person in China.'

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- (c) The area of the United Kingdom is $242\,500\text{ km}^2$.
Use this information and the information in the table on the previous page to answer the following questions about 2019.

- (i) What was the population density of the UK? [2]

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..... people per km^2

- (ii) What was the average food waste per km^2 in the UK?
Give your answer in **tonnes**. [3]

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..... tonnes



13. Dyfan has two different 25g bars of chocolate, a Chocodusk bar and a Luxury Dark bar. The Chocodusk bar has a lower cocoa content than the Luxury Dark bar.

(a) The nutritional information from these bars of chocolate is given below.



Chocodusk bar: lower cocoa content	
	Per 25g bar
Saturated fat	6.6 g
Sugar	7.1 g
Protein	3.5 g
Salt	0.01 g

Luxury Dark bar: higher cocoa content	
	Per 25g bar
Saturated fat	7.7 g
Sugar	3.5 g
Protein	2.9 g
Salt	0.09 g

- (i) Complete the following statement.

[1]

'The amount of salt in the Luxury Dark bar is % of the amount of salt in the Chocodusk bar.'

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- (ii) Dyfan eats 20g of the Luxury Dark bar.

Calculate the percentage of the Chocodusk bar that gives Dyfan the same amount of saturated fat.
You must show all your working.

[3]

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[5]



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