

Candidate Name	Centre Number					Candidate Number				
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GCSE

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

2nd SPECIMEN PAPER SUMMER 2017

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

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.

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.

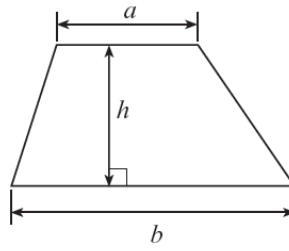
The number of marks is given in brackets at the end of each question or part-question.

The assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing in question 7.

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

Formula list

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



1. Every week, Sarah does her family shopping on the Internet.



She has to be careful to order things in the correct quantities.

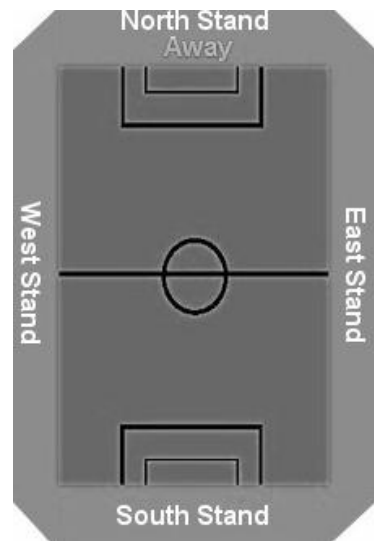
The following table shows the items and quantities that Sarah has ordered.

Place a 'X' by the items that do not appear to have a sensible quantity and a '✓' by those that do. Two have been completed for you.

[4]

Item	Quantity	X or ✓
Orange juice	2 litres	✓
Mushrooms	50 kilograms	
A bag of sugar	1 kilogram	
Tomato sauce	350 litres	
Potatoes	5 grams	X
Chocolate bar	100 grams	
Bottle of vinegar	250 millilitres	
Butter	500 grams	
Milk	4 litres	
Washing-up liquid	500 litres	

2. The diagram shows the ground layout of the Liberty Stadium.



During a recent game, the number of spectators in the

West Stand was	7345
East Stand was	6339
South Stand was	4991.

The North Stand is kept for away team spectators.
All 1093 away supporters were in the North Stand.

Showing all your working, calculate the total attendance at the game, giving your answer correct to the nearest 100.

[3]

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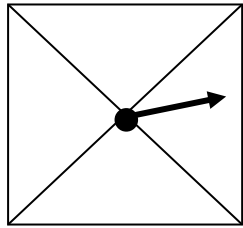
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3. Jay and Alex design a game for their school fete. They each have a copy of a fair spinner as shown below.



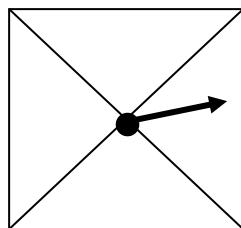
The game is based on the probability of obtaining certain numbers on the spinner, when the spinner is spun once.

(a) Jay decides that she wants to place numbers on her spinner that would give an **even chance** of getting a number **greater than 4**.

Place 4 numbers on Jay's spinner to show this.

[1]

Jay's Spinner

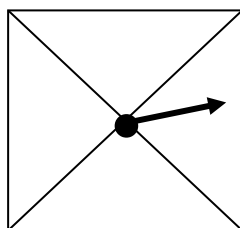


(b) Alex decides that he wants to place numbers on his spinner that would make it **certain** that you would get a number **less than 3**.

Place 4 numbers on Alex's spinner to show this.

[1]

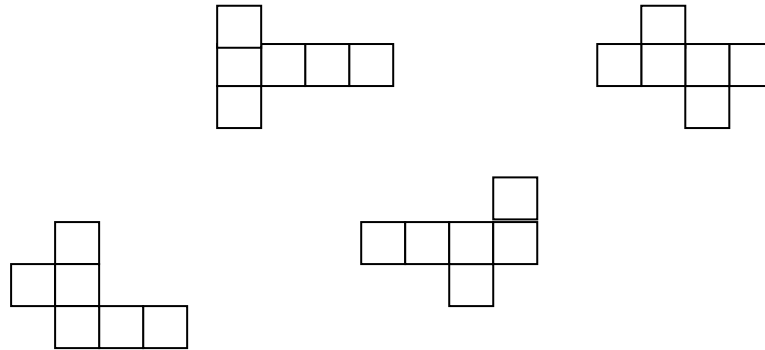
Alex's Spinner



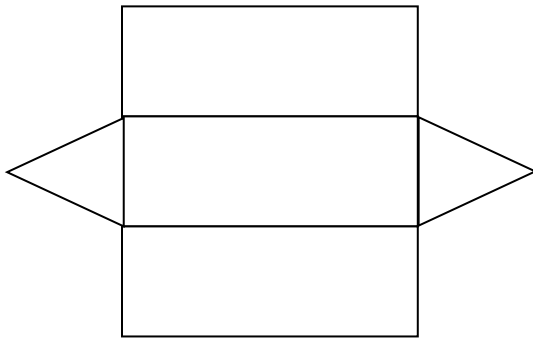
4. A jewellery shop wishes to create boxes to use for packaging gifts.

(a) Which one of the following patterns **cannot** be used to form a box in the shape of a cube?
Circle your answer.

[1]



(b) The net of a gift box is shown below.



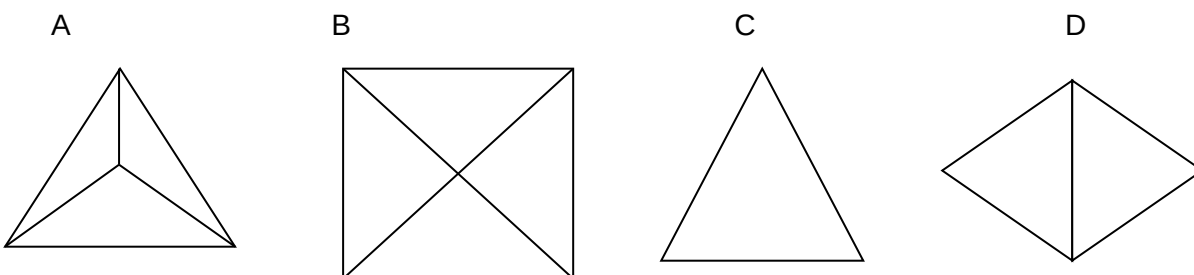
What is the name of the 3D shape made from this net?
Circle your answer.

[1]

Cuboid Triangular prism Cylinder Sphere Cone

(c) The shape of another gift box is a triangular based pyramid (tetrahedron).
Which of the following diagrams shows the top view of this gift box?
Circle your answer.

[1]



5. The table below shows the scores in the final of the Langford Bay Golf Championship.
The player with the lowest score wins the championship.

Name	Score
A. Jenkins	- 2
H. Smith	8
J. Evans	1
L. Hakami	-3
F. Loxley	-7
P.J. Ames	5
G. Francis	-1



(a) Complete the table below to show the names and scores of the players in order from 1st place to 7th place.

[3]

Position	Name	Score
1 st		
2 nd	L. Hakami	-3
3 rd		
4 th		
5 th	J. Evans	1
6 th	P.J. Ames	5
7 th		

(b) What was the difference between the scores of the players in 2nd and 6th places?
 Circle your answer.

[1]

2 -4 8 7 -2

(c) How much less would H. Smith need to score in order to win the championship?

[1]

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6. Gethin wants to organise a mountain walk in the Brecon Beacons with his 3 friends Chloe, Robert and Martyn during 2015.

He has the following information:

- He (Gethin) can only go on a Sunday;
- Chloe cannot go during the last 4 months of the year;
- Martyn works on the first 3 Sundays of each month;
- Robert cannot go during the school holidays;
- All his friends agree that the months of November, December and January are unsuitable for the walk.

The calendar shown on the opposite page is for 2015.

The school holidays are represented by



What would be the **latest date** that they could all go for the mountain walk?

You may use the calendar provided to show your working.

[5]

[illegible]

[illegible]

7. You will be assessed on the quality of your organisation, communication and accuracy in writing in this question.

Marine Bay
West Wales
Camping & Caravan Park



Pitch fees per night.

Tent = £12

Caravan = £16

Motor-home = £15

The Jones family invited their friends, the Williams and the Phillips families to stay at the Marine Bay Camping and Caravan Park, West Wales.

The Jones family have a caravan and stayed for 3 nights.

The Williams family have a motor-home and only stayed for one night.

The Phillips family stayed in a tent.

The total fee for the 3 pitches was £99.

For how many nights did the Phillips family stay?

You must show all your working.

[4 + OCW 2]

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8. The electricity meter readings at the beginning and at the end of a 3-month period were:

Reading at the end of the period	6	5	1	9	7
Reading at the beginning of the period	6	4	9	4	7

The cost of the electricity used was 30p per unit and there was a standing charge of £25.34 for the 3-month period.

Complete the following table to find the total cost.

[4]

Reading at the end of the period	
Reading at the beginning of the period	
Number of units used	
Cost of the units, in £	
Standing charge for the 3 months	
Total cost	

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9.



Ten people work at *Dragon Fitness*.
 One of these people earns £1000 per week.
 All the other 9 people earn the same weekly wage.
 The mean wage for all of these 10 people is £280 per week.

- (a) Complete the table below to show the different types of average weekly wage for these 10 people.

[4]

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Mean	Median	Mode
£280		

- (b) Complete the following sentence and give a reason for your choice of mode, median or mean.

[1]

'The average wage of people working at *Dragon Fitness* is most typically £.....'

Reason.....

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10. Carys is planning a visit to Blaenau Ffestiniog tomorrow.
Carys lives in Rhyl and plans to travel by train.

She will need to travel by train from Rhyl to Llandudno Junction, then change train to travel on to Blaenau Ffestiniog.



Carys has collected the timetables she needs to plan her day out.

Going to Blaenau Ffestiniog:

Departs	From	To	Arrives	Duration
07:08	Rhyl	Llandudno Junction	07:28	20m
07:57	Rhyl	Llandudno Junction	08:16	19m
08:29	Rhyl	Llandudno Junction	08:51	22m
08:57	Rhyl	Llandudno Junction	09:16	19m
09:27	Rhyl	Llandudno Junction	09:43	16m
09:57	Rhyl	Llandudno Junction	10:16	19m

Departs	From	To	Arrives	Duration
07:39	Llandudno Junction	Blaenau Ffestiniog	08:42	1h 03m
10:28	Llandudno Junction	Blaenau Ffestiniog	11:30	1h 02m
13:30	Llandudno Junction	Blaenau Ffestiniog	14:32	1h 02m
16:33	Llandudno Junction	Blaenau Ffestiniog	17:35	1h 02 m

Returning from Blaenau Ffestiniog:

Departs	From	To	Arrives	Duration
14:57	Blaenau Ffestiniog	Llandudno Junction	15:57	1h 00m
17:37	Blaenau Ffestiniog	Llandudno Junction	18:35	58m
20:23	Blaenau Ffestiniog	Llandudno Junction	21:21	58m

Departs	From	To	Arrives	Duration
16:18	Llandudno Junction	Rhyl	16:34	16m
16:25	Llandudno Junction	Rhyl	16:43	18m
17:15	Llandudno Junction	Rhyl	17:33	18m
17:37	Llandudno Junction	Rhyl	17:53	16m
18:39	Llandudno Junction	Rhyl	18:55	16m
18:53	Llandudno Junction	Rhyl	19:12	19m
19:26	Llandudno Junction	Rhyl	19:42	16m
19:51	Llandudno Junction	Rhyl	20:10	19m

- (a) If Carys leaves Rhyl after 9 a.m., what is the earliest possible time at which she could arrive in Blaenau Ffestiniog? Circle your answer.

[1]

10:28

11:30

13:30

14:32

14:57

- (b) Carys plans to be at the railway station in Blaenau Ffestiniog by 5 p.m. to begin her return journey home.
How much time, in hours and minutes, will it take to travel back (from the time she leaves Blaenau Ffestiniog to the time she arrives back at Rhyl station)?

[4]

This image shows a full page of white paper with ten horizontal dashed lines, typical of primary school handwriting practice paper. The lines are evenly spaced and extend across the entire width of the page. There is no text or other markings on the paper.

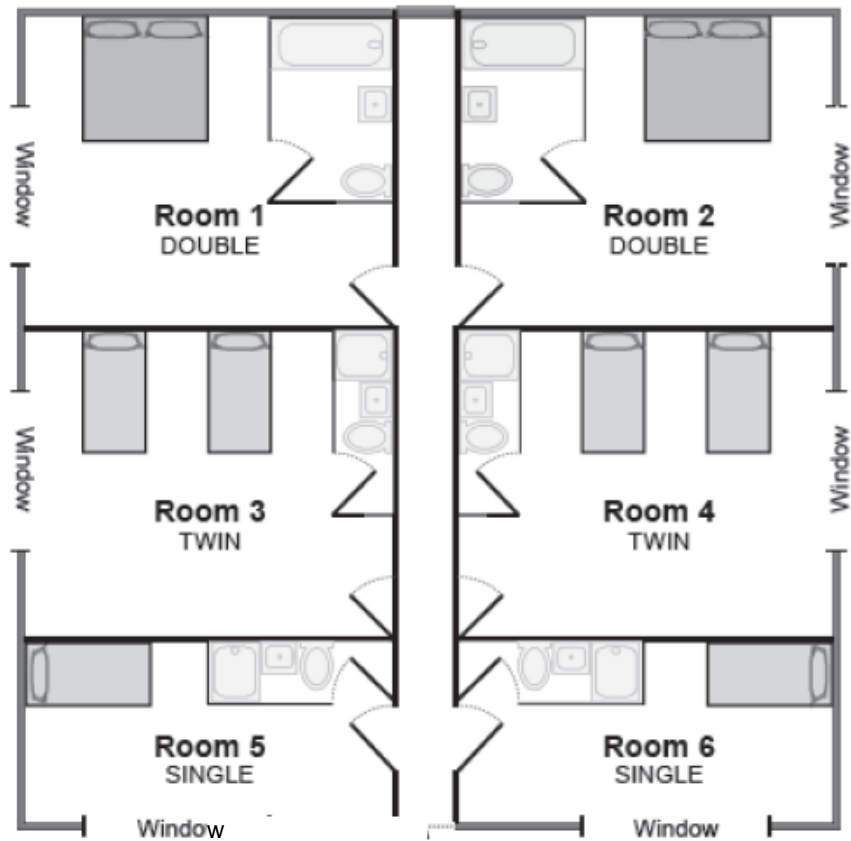
11. *Gwesty Traeth* is a guest house and has six bedrooms.

Two of the rooms are described as *Double* (they have a double bed).

Two of the rooms are described as *Twin* (they have two single beds).

Two of the rooms are described as *Single* (they have one single bed).

The diagram below shows a plan of these rooms.



The people listed below have contacted *Gwesty Traeth* requesting rooms for dates in July 2016.

- Sasha and Mia want to share a twin room for the 6th and 7th.
- Mr & Mrs Jones want a double room for the 5th.
- Flavia wants a single room for the 5th and 6th.
- Mr & Mrs Evans want a double room for themselves and a twin room for their sons, Morys and Ifan, to share for the three nights 5th, 6th and 7th.
- Their daughter Heledd will join them on the 6th and 7th, and she requires a single room.
- Mr & Mrs Igorson want a double room for the 6th and 7th.

Use the table below to show who is given which room for each of the dates from the 5th July until the 7th July.

No-one should have to change rooms during their stay.

[4]

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
5th July						
6th July						
7th July						

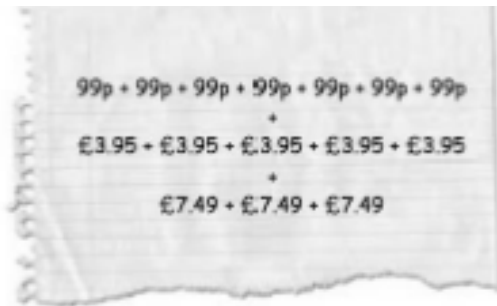
12. Thomas buys a number of items from a market stall with two £20 notes and one £10 note.

These are the items Thomas buys:



7 cereal bars at 99p each 5 pairs of socks at £3.95 each 3 sweaters at £7.49 each

Thomas waits for the owner of the market stall to list all the items he has selected.



The owner then uses a calculator to add these costs individually and gives Thomas 75p change.

- (a) Without the use of a calculator, how could Thomas check the calculation by using an efficient method?
You must show all your working.

[4]

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- (b) Did Thomas receive the correct change? If not, state the correct amount.

[1]

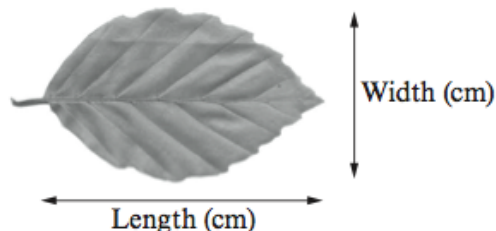
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13. Billy and Shaun both completed a survey.
They collected leaves from a number of trees and decided to measure them.

They agreed on the following decisions

- The length of the leaf does not include the stem
- The width of the leaf is measured at the widest section of the leaf



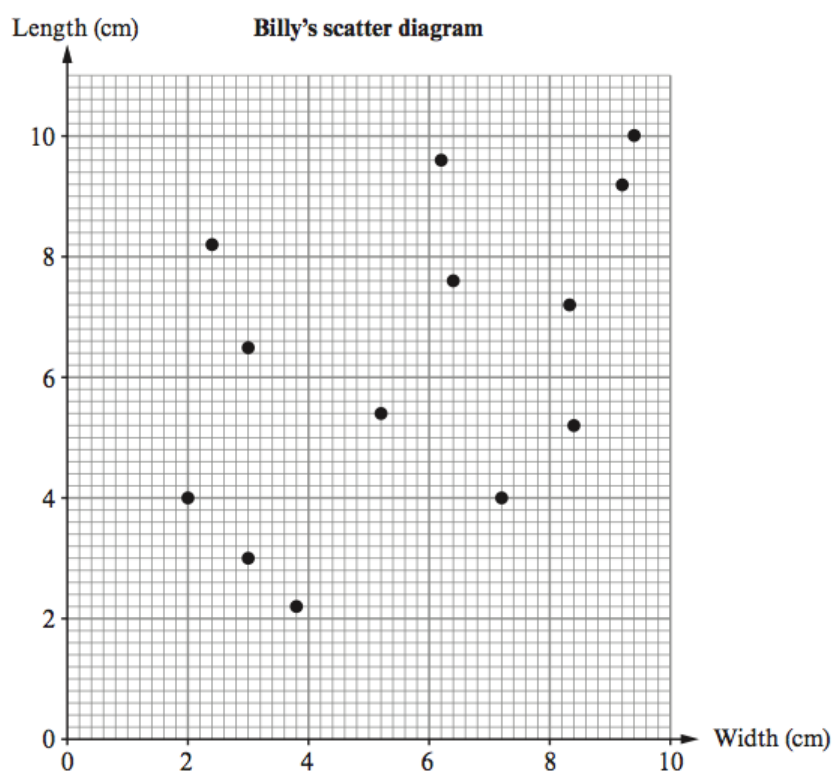
- (a) Why have they both agreed on these decisions about measuring the leaves?

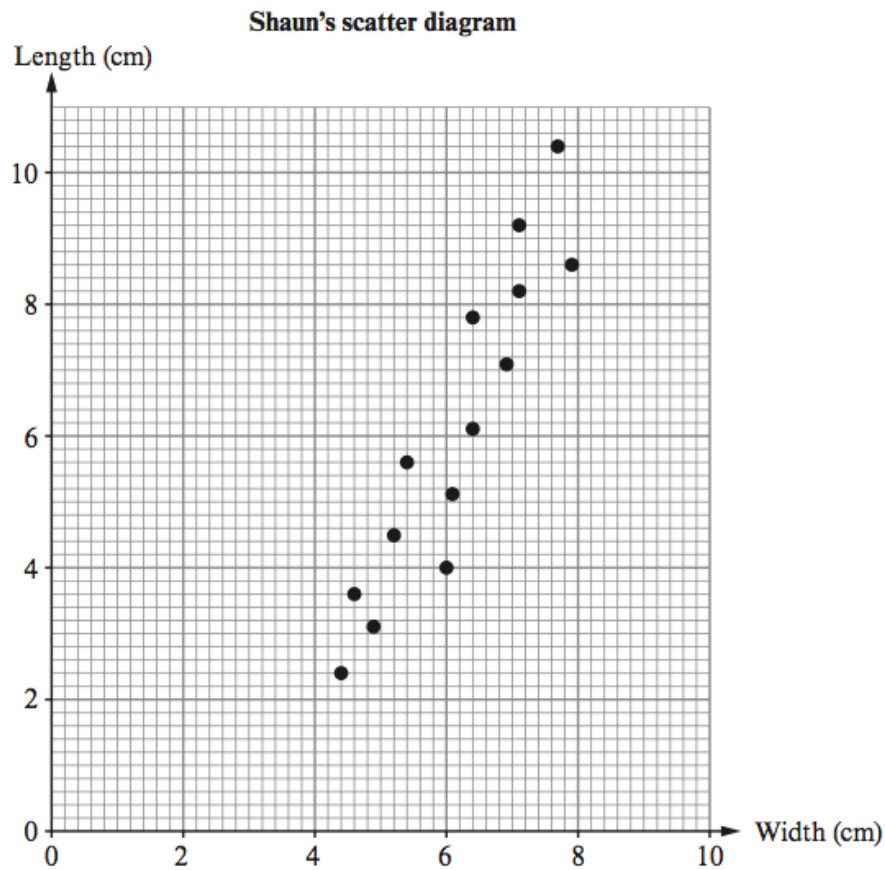
[1]

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- (b) Billy measured the length and width of each leaf he had collected.
Shaun did the same with his leaves.
They displayed the lengths and widths of their own leaves on separate scatter diagrams.
Billy's scatter diagram is shown below and Shaun's scatter diagram is shown opposite.





- (i) Who found the longest leaf?

Write down the length of this leaf. cm

[1]

- (ii) Only one of the two boys collected all his leaves from the same tree.
Who was this, Billy or Shaun? Give a reason for your answer.

[1]

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- (iii) Draw, by eye, a line of best fit on Shaun's scatter diagram.

[1]

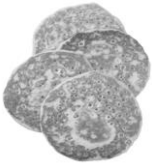
- (iv) Shaun realises he has one more leaf that he has not included on his scatter diagram.
The leaf is damaged in such a way that Shaun cannot measure its width.
The length of the leaf is 8.5 cm.
Write down a reasonable estimate for the width of this leaf.

Width cm

[1]

14.

Ingredients to make **4 pancakes**



55 g plain flour
1 egg
100 ml milk
37.5 ml water
25 g butter

Useful information: metric and imperial units

4 ounces is approximately 110 g

Using the recipe shown above, calculate the quantity of plain flour needed to make 48 pancakes. **Give your answer in ounces.**

[3]

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- 15.** In a supermarket, the same brand of shampoo is sold in two different-sized bottles.



Large bottle 800 ml for £1.28

Small bottle 300 ml for 45p

Which bottle of shampoo offers the better value for money?
You must show your working and give a reason for your choice.

[4]

[illegible]

16. The three Welsh castles, shown below, are all within walking distance of each other.

White Castle



Skenfrith Castle

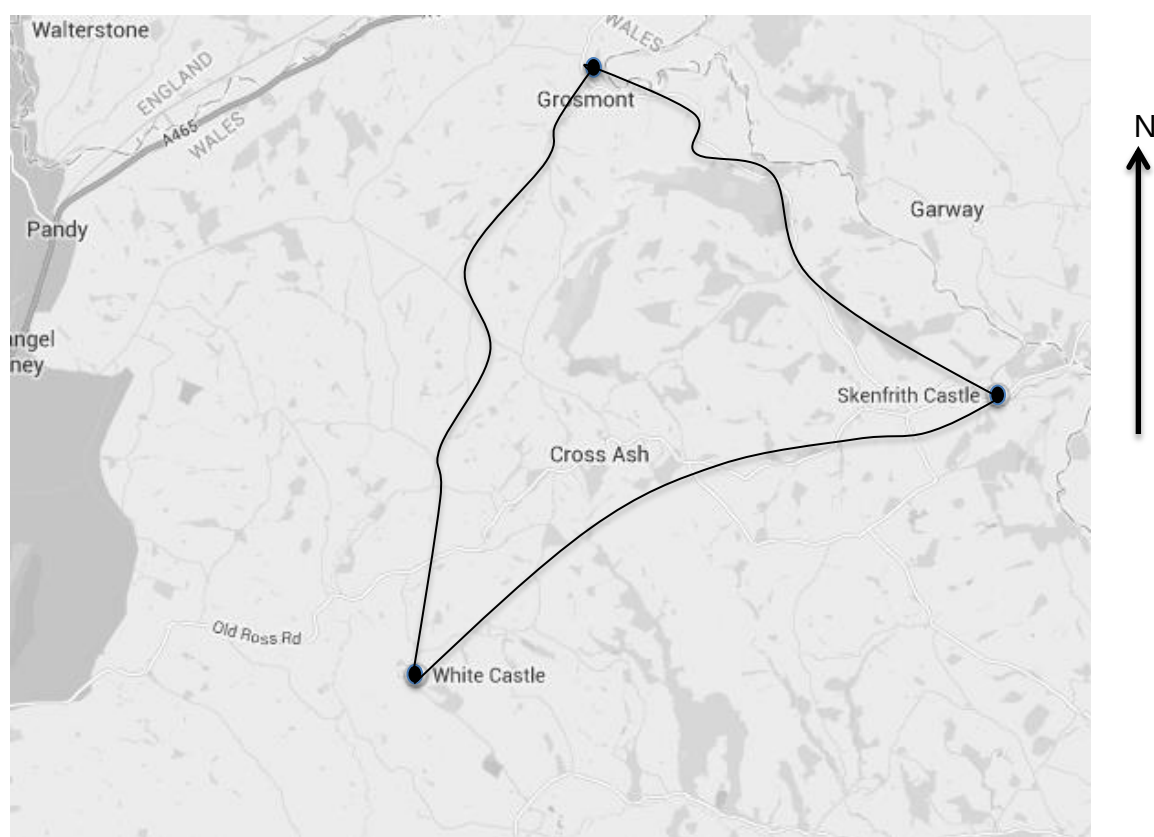


Grosmont Castle



These castles are shown on the map below.

The black lines represent the **footpaths** between the castles.



Complete the following statements.

The bearing of Skenfrith Castle from White Castle is °

The bearing of White Castle from Grosmont Castle is °

[2]

END OF PAPER