Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3310U10-1

S23-3310U10-1

FRIDAY, 19 MAY 2023 – MORNING

MATHEMATICS – NUMERACY
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

1 hour 30 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 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 **2**(a)(i), 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.	**8**	
2.	**16**	
3.	**8**	
4.	**3**	
5.	**8**	
6.	**6**	
7.	**5**	
8.	**3**	
9.	**4**	
10.	**4**	
Total	**65**	

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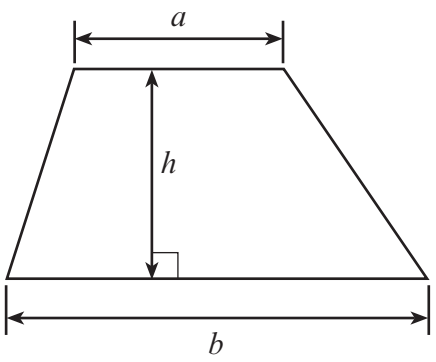
Formula List – Foundation Tier

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



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Examiner only

1. The Principality Stadium in Cardiff hosts many events.

Since it opened in June 1999 it has welcomed, on average, 1 300 000 visitors a year.

(a) Write the number 1 300 000 in words. [1]

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(b) Complete the following sentence.

By the end of June 2023, the stadium will have been open for ..... years. [1]

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(c) The table below shows some facts and figures about the Principality Stadium.

Seating capacity	73 931 spectators
Length of pitch	120 m
Width of pitch	79 m
Area of play	9480 m^2
Number of floodlights	110
Total length of mains electric cable	18 km
Maximum rate of the water supply to the stadium	90 litres/second

Examiner only

(i) How many spectators can be seated in the stadium?
Give your answer correct to the nearest 100. [1]

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(ii) What is the length of the pitch in **centimetres**? [1]

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Length of pitch ..... cm

(iii) What is the maximum number of litres of water that can be supplied to the stadium in **one minute**? [2]

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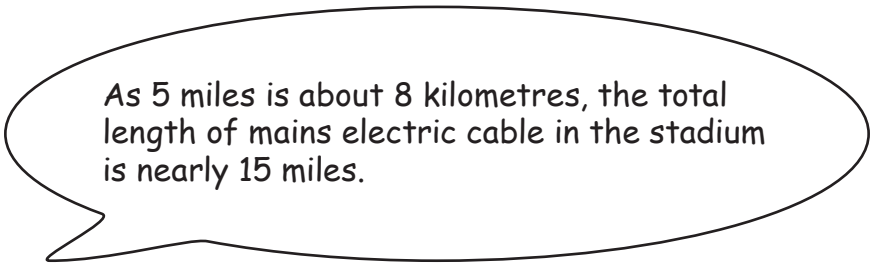
(iv) The following statement was made by a visitor to the stadium.



Is the visitor's statement correct?

Yes ☐ No ☐

You must show working to support your answer. [2]

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2. Mr Evans owns a gift shop.

(a) He bought 40 boxes of chocolates from the internet to sell in his gift shop.

Internet Price

£5 per box

Orders over £100 get 25% off the total cost

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

How much did Mr Evans pay for the 40 boxes of chocolates?
You must show all your working. [3 + 2 OCW]

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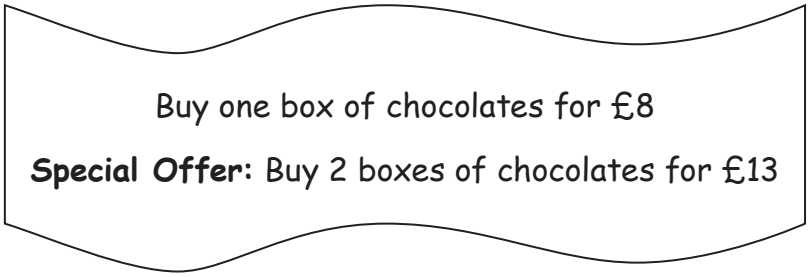
(ii) Mr Evans sold all 40 boxes of chocolates in his shop.



20 boxes of chocolates were sold for £8 each.
The remaining boxes of chocolates were sold using the special offer.

How much **profit** did Mr Evans make?
You must show all your working. [5]

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07

Turn over.

Examiner only

(b) Mr Evans wants to plant flowers outside the shop.
He uses a wooden planter.
It is in the shape of a cuboid **without** a lid.

A sketch of the wooden planter, with its dimensions, is shown below.

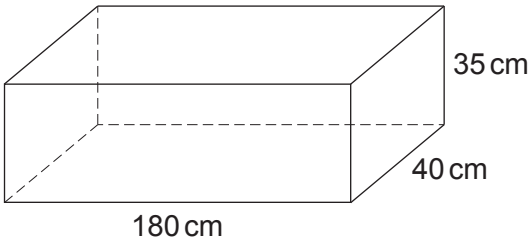
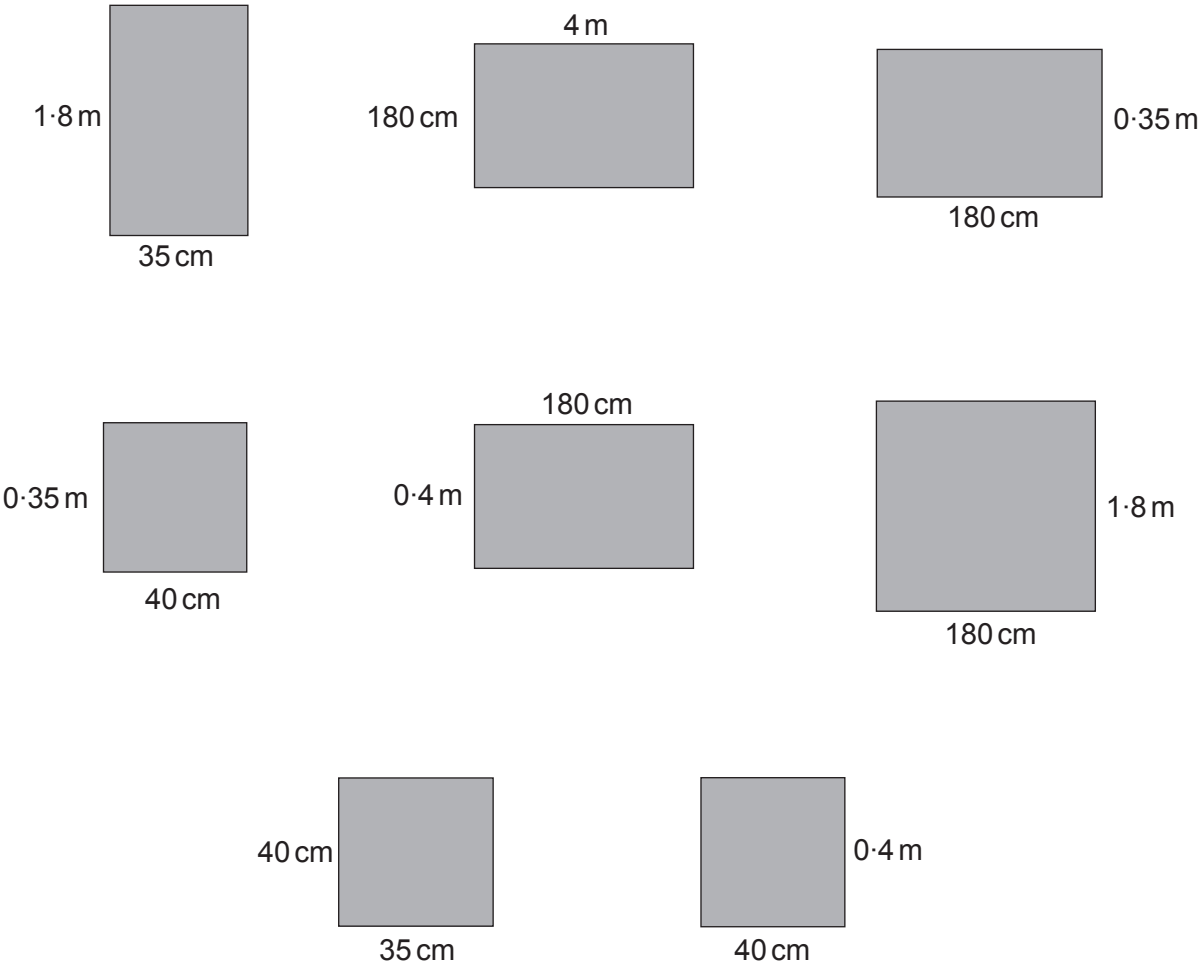


Diagram not drawn to scale

Mr Evans has 8 wooden panels.
These are shown below.
Circle the 5 panels that Mr Evans will need to use to make the planter. [3]



Diagrams not drawn to scale

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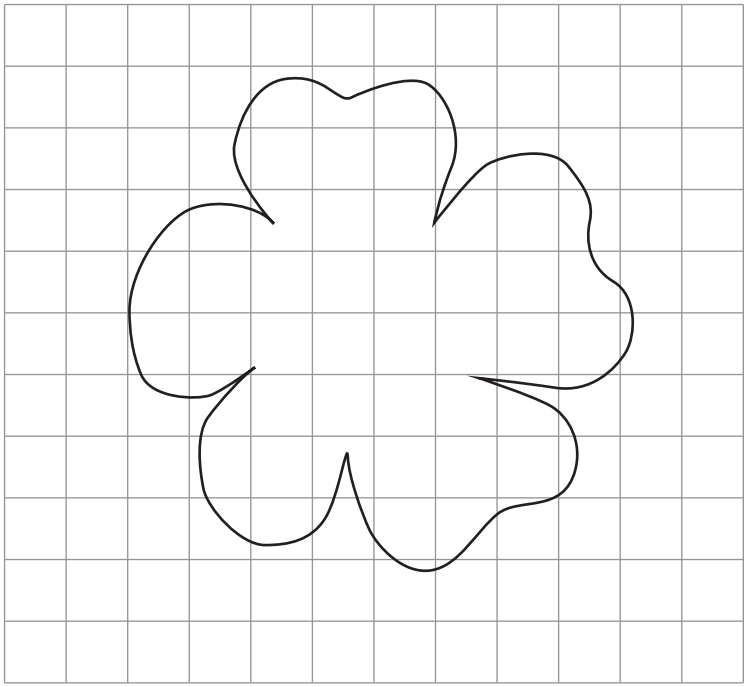
(c) Mr Evans designs a poster to place in his shop window. The poster is to advertise a local flower show.
The flower used in the poster is shown on the square grid below.
Each square on the grid represents 4 cm^2 on the poster.
Estimate the area of the flower on the poster. [3]



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Area of the flower on the poster ..... cm^2

Turn over.

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3. The table below shows the number of passengers flying from Cardiff Airport from May to September in 2017 and 2018.

	Number of Passengers	
Month	2017	2018
May	147 521	165 364
June	185 787	181 564
July	172 117	192 257
August	182 424	202 638
September	166 636	178 681

(a) In which month and year did the greatest number of passengers fly from Cardiff Airport? [1]

Month ..... Year .....

(b) Calculate the difference between the number of passengers flying from Cardiff Airport in May 2018 and those in May 2017.
Give your answer to the nearest 1000.
You must show all your working. [2]

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(c) Compare the information for 2017 with the information for 2018.
In which 2 months has the number of passengers increased by more than 20 000? [2]

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Months: ..... and .....

Examiner only

(d) Teleri has carried out a survey to find out which holiday destination is the most popular out of Tenerife, Majorca, Corfu and Benidorm.
Design a tally chart that Teleri could have used to collect her data and to show her results. [3]

Turn over.

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Small bottle
30 ml for £1.20

Medium bottle
40 ml for £1.56

Large bottle
50 ml for £2.25

Katelyn is buying some medicine.
Which size bottle of medicine offers the best value for money?
You must show all your working. [3]

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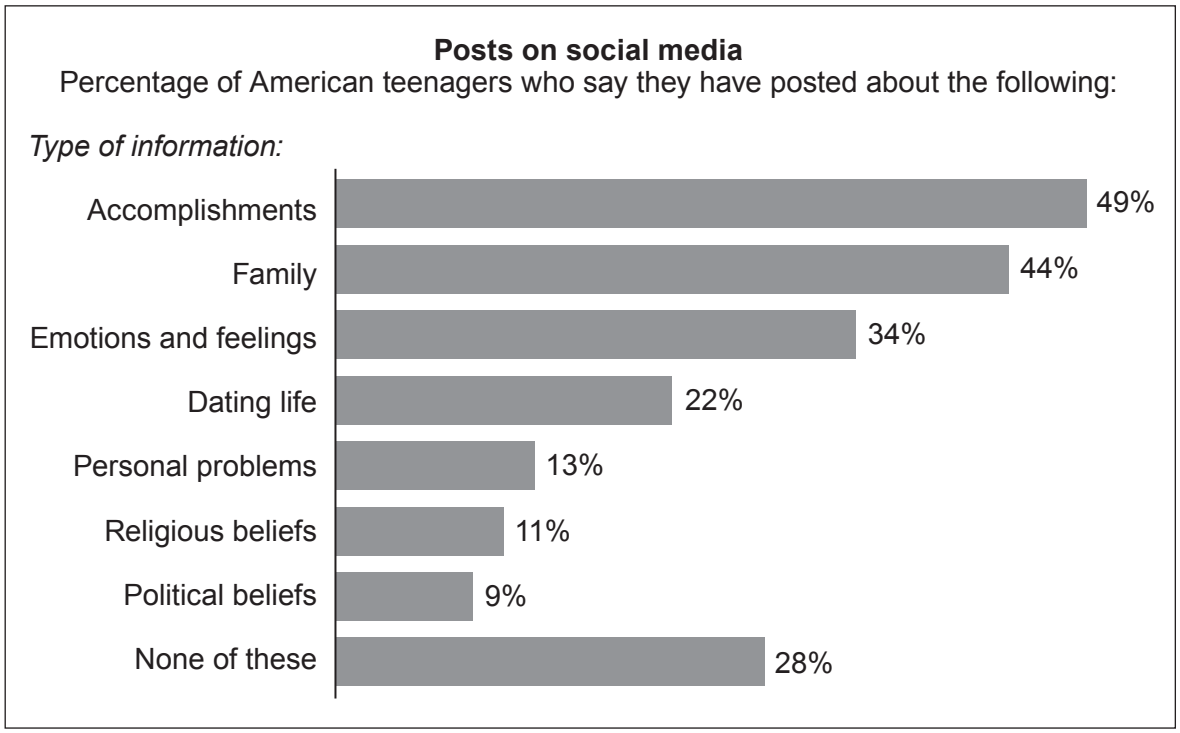
5. A survey was carried out in the U.S.A.
743 teenagers were interviewed.
They were asked what type of information they posted on social media.
The results were displayed on the internet, as shown below.



(a) How many times bigger is the percentage of the teenagers who posted about their family than the percentage who posted about their religious beliefs? [1]

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(b) What fraction of these teenagers posted about their emotions and feelings?
Give your answer in its simplest form. [1]

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(c) Dewi looks at the type of information posted by these teenagers.
What is the modal type of information? [1]

The modal type of information is .....

Examiner only

(d) What information would have been needed in the original data so that the following hypothesis could be tested? [1]

> In the U.S.A., teenage girls post about family more often than teenage boys.

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(e) How many of these 743 teenagers posted about their religious beliefs?
You must show all your working. [3]

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(f) Lottie is confused by the data in the diagram.

She says,

> This diagram can't be right, as all the bars don't add up to 100%.

The diagram is correct.
Explain why the bars do not add up to 100%. [1]

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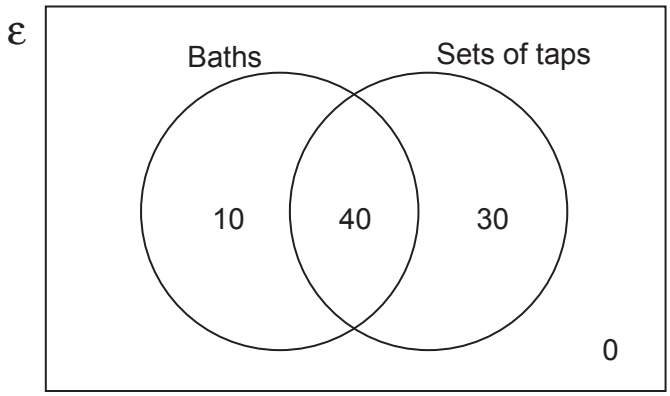
Examiner only

6. HydraDwr is a bathroom and plumbing shop.

(a) HydraDwr sells baths and sets of taps.

One day, 80 customers bought:
- one bath and one set of taps, or
- one bath, or
- one set of taps.

The Venn diagram shows the number of customers who bought these items.



(i) How many baths did these customers buy? [1]

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(ii) A bath costs £180.
A set of taps cost £60.

Calculate the total cost of the baths and sets of taps bought by these 80 customers. [3]

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Examiner only

(b) HydraDwr also sells pipes and couplings to join the pipes.

Pipes

Couplings

(i) 3 pipes are joined together using 2 couplings, as shown below.

Diagram not drawn to scale

How many couplings are needed to join 6 pipes? [1]

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(ii) An equation is used to work out the number of couplings needed to join pipes.

P = the number of pipes
C = the number of couplings

Which of the following equations can be used to calculate the number of couplings needed?
Circle your answer. [1]

$C = 2P$ $C = P + 1$ $C = P - 1$ $C + P = 1$ $C = P$

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Examiner only

7. Lynette is ordering a T-shirt.
She wants her initial, L, printed on the T-shirt.

Details of Lynette's design are given below.

- The height is twice the width.
- The height is 10 cm.

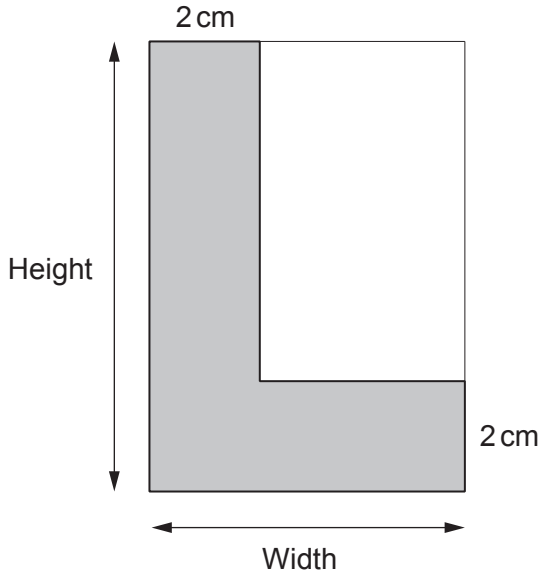

Diagram not drawn to scale

The cost of printing is 50p for an area of 2 cm^2.

How much will it cost Lynette to have her design printed on a T-shirt? [5]

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8. A survey was carried out to find how often primary school children play board games.

A questionnaire was designed for primary school children to answer.
The following two questions were asked.

Q1. Do you live within 5 minutes' walking distance of school?

Q2. How often do you play board games?

Never	1–5 times	5–10 times	More than 10 times
☐	☐	☐	☐

(a) For each question, give **one** reason why it is **not** suitable. [2]

Q1. .....

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Q2. .....

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(b) The survey was carried out by leaving copies of the questionnaire in the local supermarket.

Give **one** criticism of how the survey was carried out. [1]

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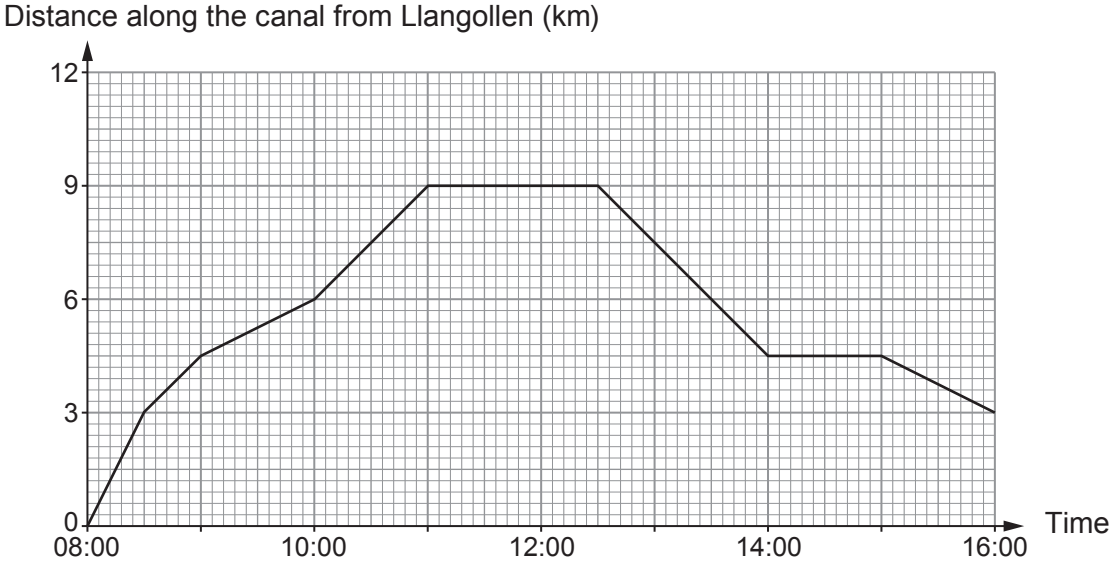
Examiner only

9. (a) Hesta and Walt hire a canal boat in Llangollen for their holiday.

Hesta records their distance along the canal from Llangollen between 8 a.m. and 4 p.m.
This is shown in the travel graph below.



(i) During the day, Hesta and Walt made stops by the side of the canal.
At what time did Hesta and Walt first stop at the side of the canal? [1]

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(ii) Between which two times were Hesta and Walt travelling the fastest?
Circle your answer. [1]

08:00 and 08:30 08:30 and 09:00 10:00 and 11:00

12:30 and 14:00 15:00 and 16:00

(iii) What is the total distance Hesta and Walt travelled in the boat between 8 a.m. and 4 p.m.?
Circle your answer. [1]

3 km 9 km 12 km 15 km 18 km

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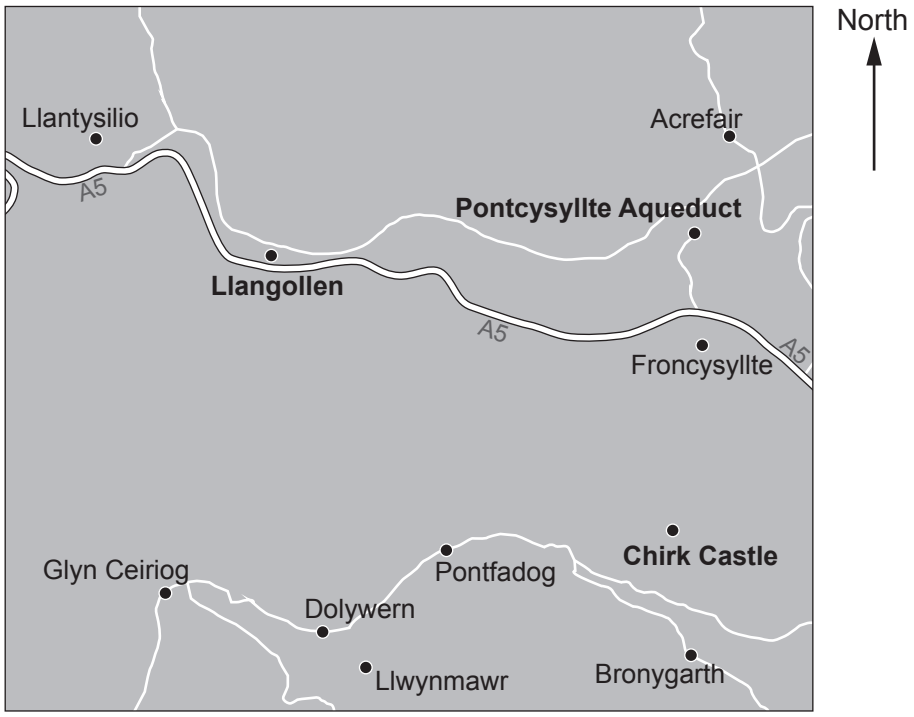
(b) Hesta and Walt visit Chirk Castle.



Which is the best estimate for the bearing of Llangollen from Chirk Castle?
Circle your answer. [1]

060° 240° 120° 340° 300°

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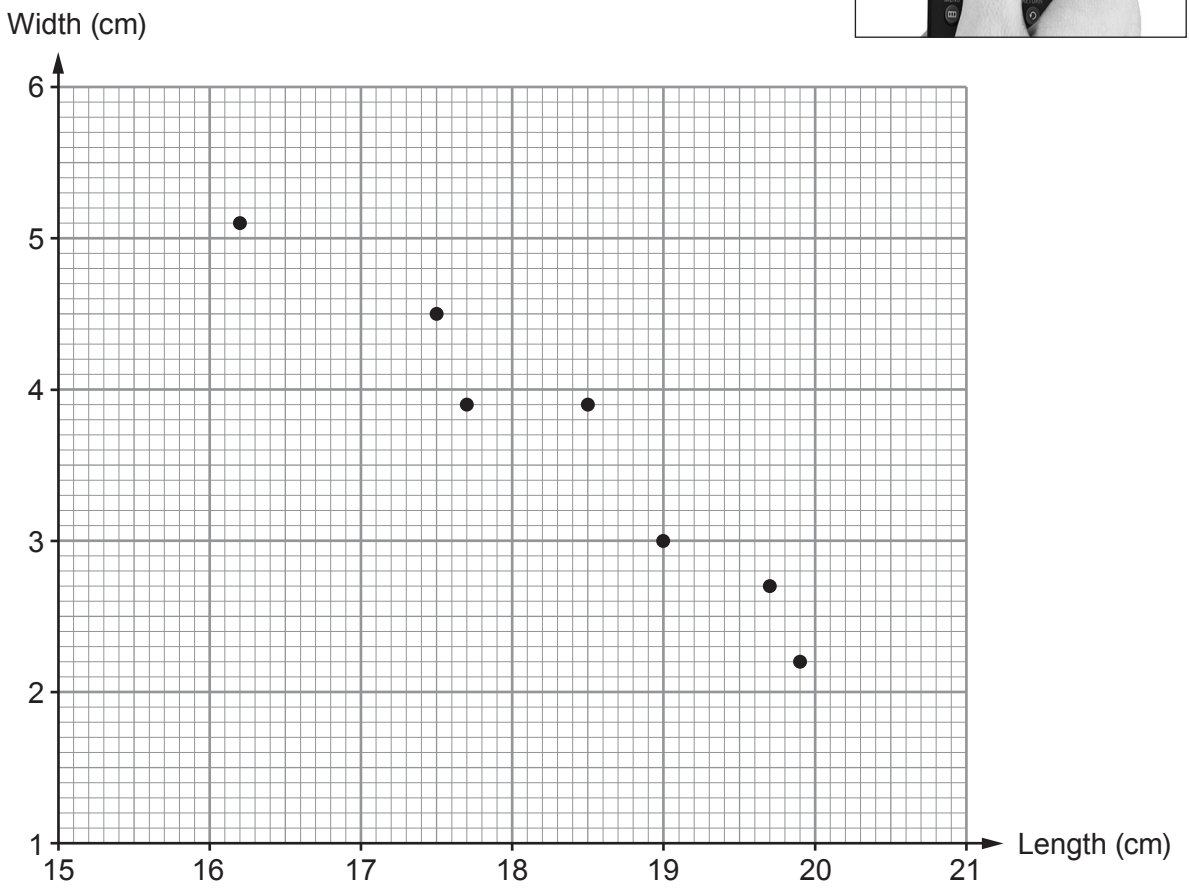
10. The scatter diagram shows the length and width of some television remote handsets.



(a) Two of the remotes have the same width.
Write down the width and lengths of these remotes. [2]

Width ..... cm

Lengths are ..... cm and ..... cm.

(b) How is it best to describe the correlation seen in this scatter diagram? [1]

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(c) Draw a line of best fit on the scatter diagram. [1]

END OF PAPER

Question number	Additional page, if required. Write the question number(s) in the left-hand margin.

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