Surname		Centre number	Candidate number
First name(s)			0

GCSE

3320UA0-1

Mathematics and Numeracy (Double Award)
Unit 1: Financial Mathematics and Other Applications of Numeracy
Foundation Tier

1 hour 30 minutes
SAMPLE ASSESSMENT MATERIALS

Additional materials

The use of a calculator will be required for 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 provided at the top of this page.

Answer **all** the questions in the spaces provided.

If you need more space, use the additional page(s) at the back of this booklet. Number the question(s) correctly.

Take π as 3·14 or use the π button on your calculator.

Information for candidates

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

In question 2(a), the assessment will take into account the quality of your organisation, communication and accuracy in writing.

For examiner's use only		
Question	**Maximum mark**	**Mark awarded**
1.	7	
2.	10	
3.	5	
4.	5	
5.	5	
6.	11	
7.	3	
8.	5	
9.	7	
10.	3	
11.	4	
Total	65	

Formula List – Unit 1 Foundation Tier

Area of a trapezium = $\frac{1}{2}(a+b)h$
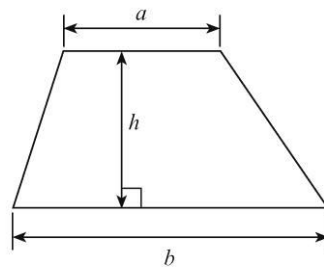
Volume of an Object with a Uniform Cross-section (e.g. Prism, Cylinder)

Volume = area of cross section × length
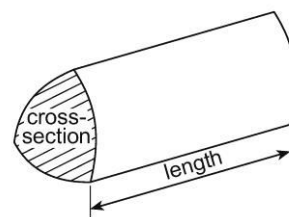
1. (a) Noor's bank statement shows the following details for last week. [4]

Date	Description	Credit (£)	Debit (£)	Balance (£)
25.09.2024	Starting balance			350.00
27.09.2024	Wages	……………		1100.00
01.10.2024	Rent		575.00	……………
03.10.2024	Sale of bike	295.00		……………
04.10.2024	Council tax		……………	705.65

Complete the four missing entries in her bank statement.

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

(b) Noor has a 4-digit code for her online bank account.

She remembers the code as two pairs of two-digit numbers.

- All 4 digits of Noor's code are **different**.
- The first two-digit number is a square number between 40 and 50.
- The second two-digit number is an even number that is also a multiple of 3 between 20 and 35

[3]

What is Noor's 4-digit code?

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Noor's 4-digit code is: …… …… …… ……

2.   A group of friends walked part of the Pembrokeshire Coast Path to raise money for charity.

They completed 3 parts of the path over 3 days.
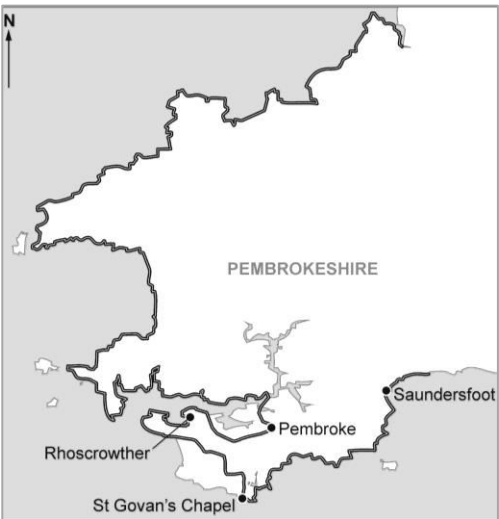
(a)   *In this part of the question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

Here are the start and finish times for the three parts of the coast path that they walked.

Day	Parts of the Coast Path	Started walking	Finished walking
1	Saundersfoot to St Govan's Chapel	08:30	15:50
2	St Govan's Chapel to Rhoscrowther	11:15	16:50
3	Rhoscrowther to Pembroke	10:00	13:45

Find the total time the friends spent walking these parts of the coast path. Give your answer in hours and minutes.

You must show all your working. [5 + 2 OCW]

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

(b) The distance that the friends walked each day was:
- 22 miles on day 1
- 17 miles on day 2
- 12 miles on day 3

What was the total distance that the friends walked in the 3 days?
Give your answer in **kilometres**. [3]

> Use the conversion:
>
> 1 mile ≈ 1.6 km

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

3. Ceri goes on holiday with his family to the North Wales coast.
They all stay at the Ocean Bay camping and caravan park.
The fees for a pitch for one night are shown below.

Ocean Bay
Camping & Caravan Park

Pitch fees per night.
Tent = £28
Caravan = £31
Motorhome = £36

Ceri's sister Penny and her children have a caravan and stayed for 6 nights.

Ceri's parents have a motorhome and only stayed for 3 nights.

Ceri stayed in a tent.

The total fee for the 3 pitches was £434.
How many nights did Ceri stay for?

[5]

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

4. Mr Singh has a rectangular back garden.

    He wants to place new fencing around 3 sides of his garden, as shown in the picture.
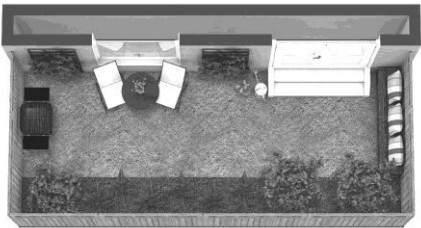
    The diagram below shows the measurements of the sides of Mr Singh's garden that need fencing.

    12 m   12 m

    18 m
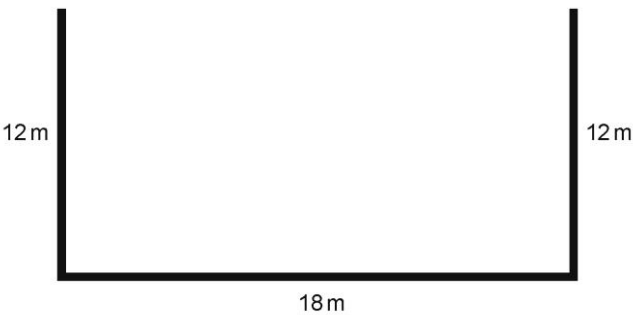
    Diagram not drawn to scale

    Fencing is bought in panels.
    Each fence panel is 1.5 metres long and costs £36.99

    Find the total cost of the fence panels needed for Mr Singh's garden.

    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………
    …………………………………………………………………………………………………

5. (a) Shampoo is sold in bottles of three different sizes: small, medium and large. [2]

The sales manager wrote a report on the sales of the different sizes of shampoo bottles.

The report included the bar chart below.
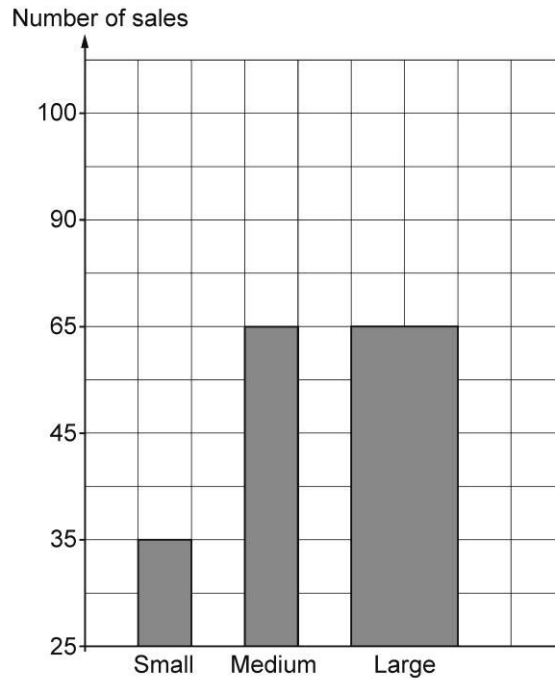
Number of sales

The sales manager made the following two statements:

'This graph shows that the number of medium bottles sold was more than double the number of small bottles sold, as the medium bar is more than double the height of the small bar.'

'It also looks like the number of large bottles sold was double the number of medium bottles sold.'

The sales manager's statements are incorrect.

Using the bar chart, give one explanation for each statement that has led the sales manager to make these incorrect statements.

1. ....

....

2. ....

....

(b)

Small bottle
100 ml for £1.60

Medium bottle
250 ml for £3.50

Large bottle
400 ml for £5.80

Katie is buying shampoo.

Which size bottle of shampoo is the best value for money?
You must show all your working.

....

....

....

....

....

....

6. Powys Bakes is a bakery that makes Welsh cakes.
The bakery sells the Welsh cakes in gift boxes.

(a) Each Welsh cake is circular and has a diameter of 7 cm and a depth of 1.5 cm.
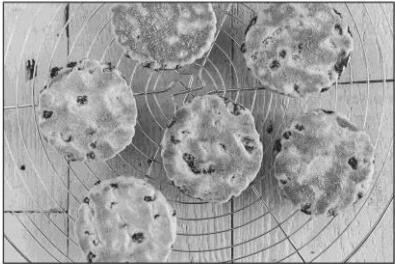
The gift box is in the shape of a cuboid with measurements 23 cm by 16 cm by 10 cm.
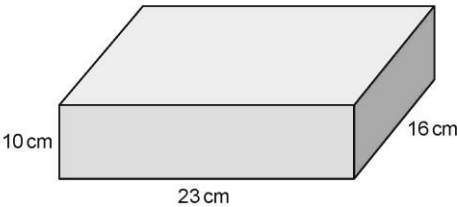
Diagram not drawn to scale

The Welsh cakes are placed in layers so that they **lie flat** in the gift box.

A horizontal sheet of card is placed between each layer of Welsh cakes.
Each sheet has a depth of 0.5 cm.

(i) What is the maximum number of Welsh cakes that can fit into the gift box? [5]

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

(ii)   What is the volume of the gift box? [3]
State the units of your answer.

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

(b)   The bakery provides a delivery service. [3]

Delivery charges
For delivering a box of Welsh cakes: Cost in **pence** = 15 × number of miles + 50

Jacob's grandmother lives 40 miles away from the bakery.

How much would it cost Jacob to have a box of Welsh cakes delivered to his grandmother?
Give your answer in pounds (£).

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

7. The Physical Education (PE) department in Ysgol Ddwysaint wants to test the following hypothesis:

'Most pupils in Year 11 spend less than $2\frac{1}{2}$ hours per week doing exercise.'

(a) Part of the questionnaire they will give to pupils in Year 11 asks the following question: [2]

> How many hours do you spend exercising?
>
> 0 to 1   2 to 3   4 to 5   6 to 7
>
> ☐   ☐   ☐   ☐

Give two reasons why the question is not suitable.

Reason 1: …………………………………………………………………….

……………………………………………………………………………

Reason 2: …………………………………………………………………….

……………………………………………………………………………

(b) The PE department plans to give out the questionnaire to Year 11 pupils studying GCSE Physical Education and Health.

[1]

Give **one** criticism of this plan.

………………………………………………………………………………

………………………………………………………………………………

8. Mr Bevan used 660 kWh of electricity during September, October and November last year. [5]

For the same 3-month period this year, he assumes his usage of electricity will not change.

Mr Bevan has the following information about electricity charges this year.
*   The standing charge is £15 **per month**
*   Electricity costs 29p per kWh
*   VAT at 5% is payable on the total of the standing charge and the cost of the electricity used.

Calculate how much Mr Bevan's electricity bill will be for the 3-month period of September to November this year.

....

....

....

....

....

....

....

....

....

....

9. Nerys travelled by bike along a straight road to visit her friend.
The travel graph below shows Nerys's journey.
On the way to her friend's house, she stopped at a shop.
She stayed at her friend's house for some time. Then, she travelled home.

Distance from home (km)

Time (minutes)
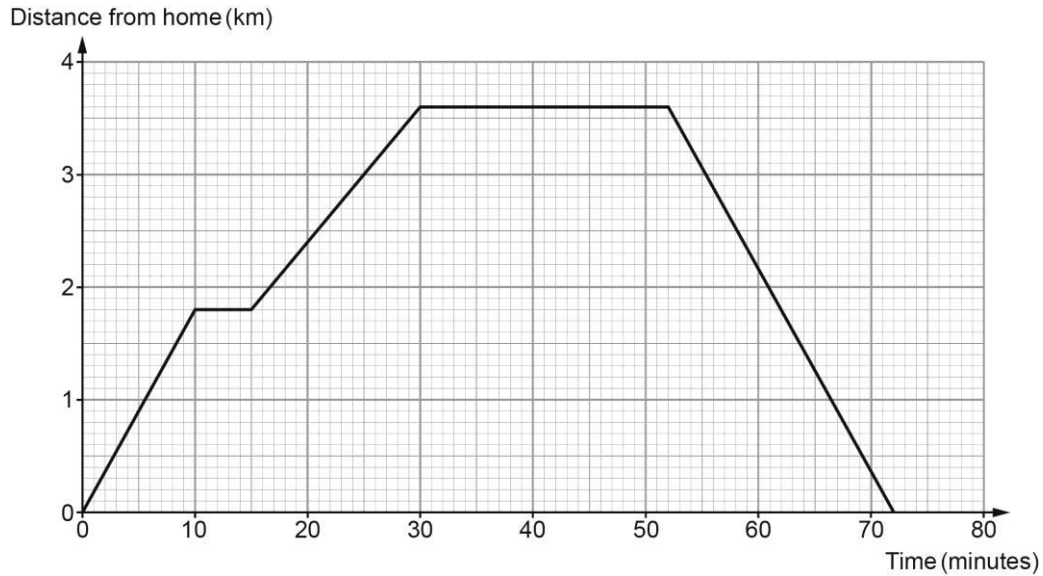
(a) How far had Nerys travelled in total after an hour? [2]

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

(b) Nerys started her journey at 10:00. [2]
At what time did she return home?

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

(c) Nerys's bike has a computer that displays data about her journey.
When the bike is moving, it measures distance travelled and time taken.

What average speed did the computer show at the end of Nerys's journey?
Give your answer in kilometres per hour.

....

....

....

....

....

....

10. Sian and Kim are saving to buy an electric guitar that they will share.
The guitar they want to buy costs £385.

Sian and Kim will pay for the guitar in the ratio 5 : 6 respectively.
They will each save over the next 4 weeks.
Sian will put an equal amount of money aside per week.
Kim will also put an equal amount of money aside per week.

Calculate how much money Sian and Kim will need to save per week to pay for the guitar. [3]

....

....

....

....

....

....

Sian will save £ …………………… per week

Kim will save £ …………………… per week

11. Isabelle has created a flowerbed in the shape of a trapezoidal prism. The plan view of the flowerbed is shown in the diagram below.

165 cm

213 cm

380 cm
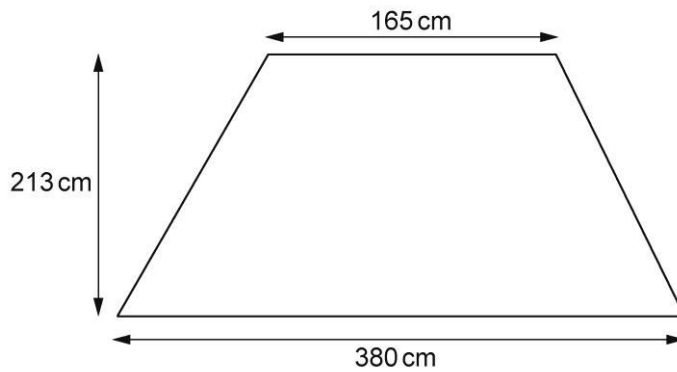
Diagram not drawn to scale

Isabelle is going to buy enough compost to fill the flowerbed to a uniform depth of 30 cm.

Calculate the volume of compost Isabelle will need. [4]
Give your answer in **litres**.

....

....

....

....

....

....

....

....

END OF QUESTIONS

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