Surname	Centre Number	Candidate Number
First name(s)		0

Examiner only

REVISE .wales

GCSE

R.WM-MNF-U1-001

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MOCK PAPER A

MATHEMATICS AND NUMERACY (DOUBLE AWARD)

UNIT 1: FINANCIAL MATHEMATICS AND OTHER APPLICATIONS OF NUMERACY FOUNDATION TIER

1 hour 30 minutes

ADDITIONAL MATERIALS

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 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 all work written on the additional page.

Take π as $3{\cdot}14$ 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 **5**, 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.	**8**	
3.	**6**	
4.	**6**	
5.	**8**	
6.	**6**	
7.	**8**	
8.	**9**	
9.	**9**	
Total	**65**	

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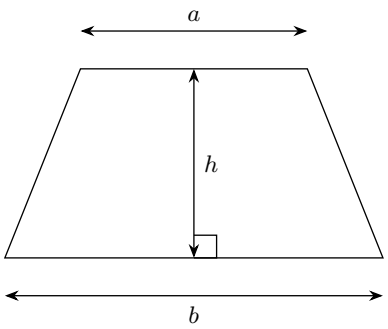
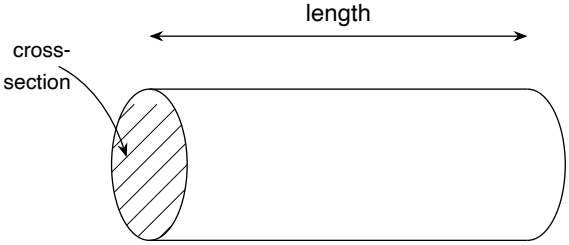
Formula List – FOUNDATION TIER

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

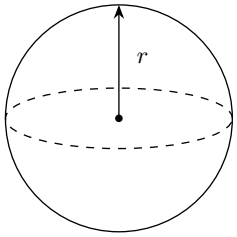


Volume of prism = area of cross-section $\times$ length



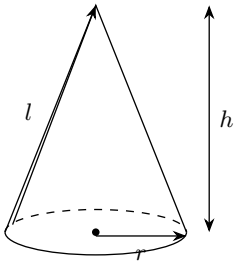
Volume of sphere $= \frac{4}{3}\pi r^3$

Surface area of sphere $= 4\pi r^2$



Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi r l$

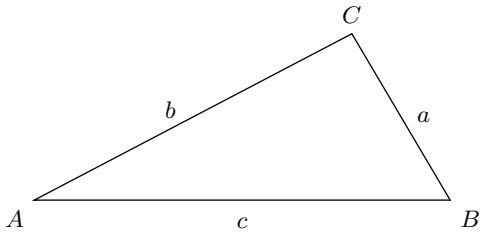


In any triangle ABC

Sine rule $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Cosine rule $a^2 = b^2 + c^2 - 2bc\cos A$

Area of triangle $= \frac{1}{2}ab\sin C$



The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Annual Equivalent Rate (AER)

AER, as a decimal, is calculated using the formula $\left(1 + \frac{i}{n}\right)^n - 1$, where i is the nominal interest rate per annum as a decimal and n is the number of compounding periods per annum.

1.

(a) Calculate 35% of £240. [2]

Answer = £ .....

(b) A box of cereal weighs 750 g. Calculate $\frac{2}{5}$ of the weight of the box. [2]

Answer = ... g

(c) Write $7{\cdot}4863$ correct to 2 decimal places. [1]

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Answer = ...

2. Sara visits a shop. The prices of three items are shown on the price tags below.

Loaf of bread	Carton of milk	Pack of cheese
£1·25	£1·40	£3·60

(a) Sara buys 2 loaves of bread, 3 cartons of milk and 1 pack of cheese. [3]
Calculate the total cost of these items.

Total cost = £ .....

(b) The shop's electricity bill for the month was £180 before VAT. VAT is then added at a rate of 20%. [2]
Calculate the total bill including VAT.

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Total bill = £ . . . . . .

(c) Sara pays for her shopping (from part (a)) using a £ 20 note. [3]
Calculate how much change she should receive.

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Change = £ . . . . . .

3. Daniel works in a warehouse. He is paid £ $11{\cdot}40$ per hour for the first 35 hours each week, and "time-and-a-half" ($1{\cdot}5$ times the basic rate) for any extra hours.
Last week Daniel worked 35 basic hours and 6 overtime hours.

(a) Calculate Daniel's gross pay for last week. [3]

Gross pay = £ .....

From Daniel's gross pay, the following deductions are taken:

Deduction	Amount
Income tax	£ $45{\cdot}60$
National Insurance	£ $28{\cdot}50$
Pension	£ $19{\cdot}80$

(b) Calculate Daniel's take-home (net) pay for last week. [3]

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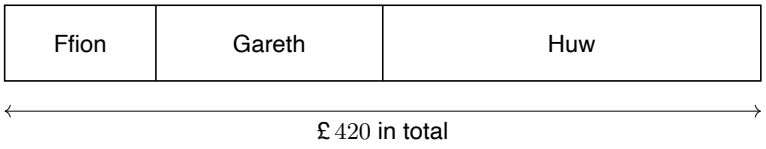
Net pay = £ . . . . . .

4.

(a) Three friends, Ffion, Gareth and Huw, share £ 420 in the ratio $2 : 3 : 5$ [3]
(Ffion : Gareth : Huw).
Calculate how much each friend receives.



Ffion = £ .....

Gareth = £ .....

Huw = £ .....

A recipe for a fruit smoothie that serves 4 people uses the following ingredients.

Ingredient	Amount (for 4 people)
Bananas	2
Strawberries	160 g
Milk	400 ml
Honey	30 g

(b) Calculate the amounts of each ingredient needed to make the smoothie for 10 people. [3]

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..... bananas

..... g strawberries

..... ml milk

..... g honey

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

A supermarket sells the same brand of orange juice in two different carton sizes, as shown below.

Small
500 ml
£1·45

Large
1·5 litres
£3·90

Determine which carton is the better value for money.
Write out your method in full sentences. Show clearly the cost per litre (or per millilitre) for each carton, compare the two values, and state your conclusion. [6 + 2 OCW]

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Better value = ...

6. Megan puts £ $2{,}500$ into a savings account that pays 3% *simple* interest per year. She leaves the money in the account for 4 years.

Savings Account
3% simple interest
per year
(interest paid on original deposit only)

(a) Calculate the total amount of interest Megan earns after 4 years. [4]

Interest = £ .....

(b) Calculate the total amount in the account at the end of the 4 years. [2]

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Total = £ . . . . . .

7. Part of a bus timetable from Cardiff to Newport is shown below.

Stop	Bus A	Bus B	Bus C
Cardiff Central	09:15	09:45	10:20
Newport Road	09:32	10:02	10:37
Rumney	09:48	10:18	10:53
Newport Bus Stn	10:05	10:35	11:10

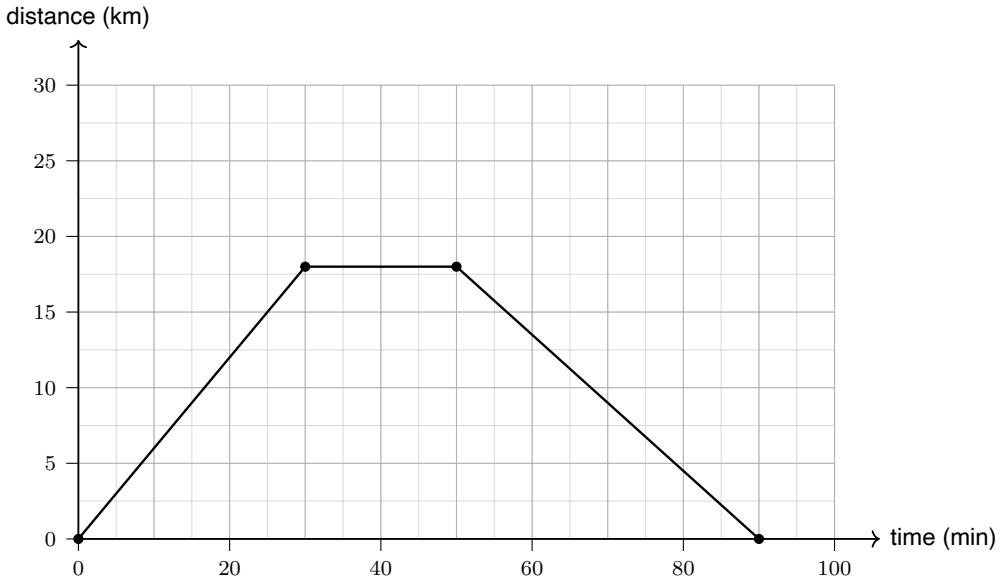
(a) Iwan needs to be in Newport Bus Station by 11:00. [2]
Write down the latest time he can catch a bus from Cardiff Central.

Latest time = ...

(b) Calculate how long Bus B takes to travel from Cardiff Central to Newport Bus Station. [2]
Give your answer in minutes.

Journey time = ... minutes

The distance-time graph below shows the journey of a delivery van.



(c) Use the graph to answer the following.

(i) Write down how long, in minutes, the van was stationary. [1]

Stationary for = ... minutes

(ii) Calculate the average speed of the van on the outward leg (from 0 to 30 minutes), in km/h. [3]

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Outward speed = ... km/h

8. A flowerbed in a garden is shaped like the L-shape shown below. All angles are right angles. The dimensions are given in metres.

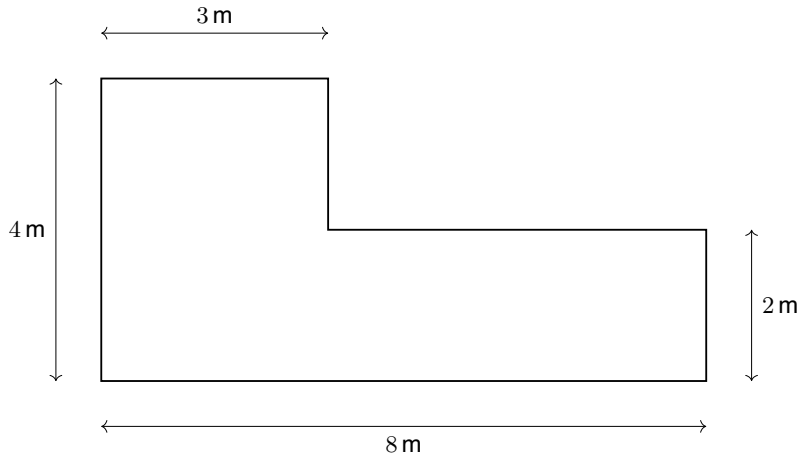

Diagram not drawn to scale

(a) Calculate the perimeter of the flowerbed. [3]

Perimeter = ... m

(b) Calculate the area of the flowerbed. [4]

Area = ... m^2

(c) Bark chippings to cover the flowerbed cost £$4{\cdot}80$ per square metre. [2]
Calculate the total cost of covering the whole flowerbed.

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Total cost = £ . . . . . .

9. The map below shows the positions of three villages: Ashford (A), Bryn (B) and Capel (C). The map is drawn to a scale of 1 cm represents 2 km.

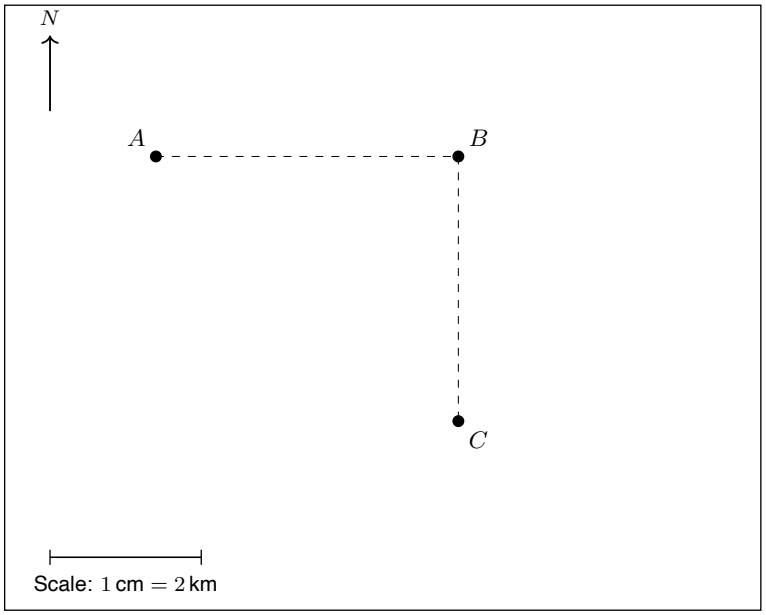

Diagram not drawn to scale

(a) The distance from A to B on the map is 4 cm. [3]
Calculate the real distance, in kilometres, from Ashford to Bryn.

Real distance $AB =$ ..... km

(b) Write down the bearing of Capel (C) from Bryn (B). [3]

Bearing = ...

(c) A fourth village, Dinas (D), is on a bearing of $270°$ from Capel (C) and is 6 km from Capel. [3]
Mark the position of Dinas on the map with a cross, and label it D. Show your working below.