Surname	Centre Number	Candidate Number
First name(s)		0

Examiner only

REVISE .wales

GCSE

R.WM-MNF-U1-002

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MOCK PAPER B

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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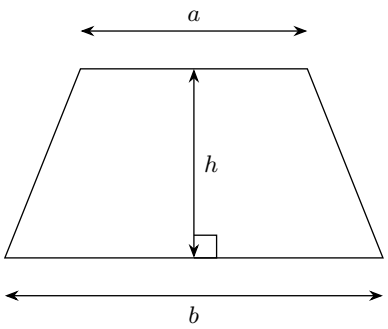
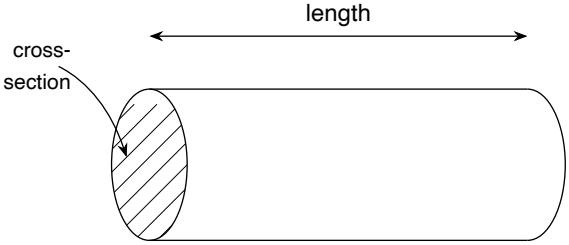
Formula List – FOUNDATION TIER

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

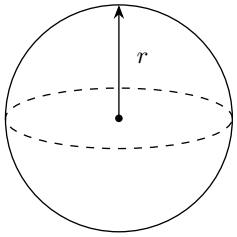


Volume of prism = area of cross-section $\times$ length



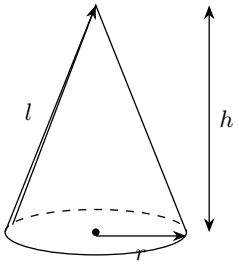
Volume of sphere $= \frac{4}{3}\pi r^3$

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



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

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

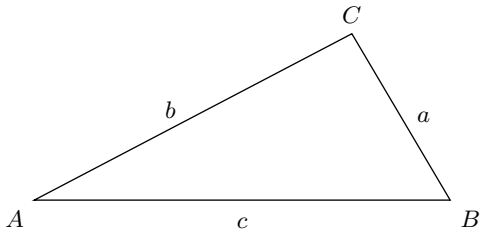


In any triangle ABC

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 20% of £350. [2]

Answer = £ .....

(b) A jug holds 900 ml of juice. Calculate $\frac{3}{4}$ of this amount. [2]

Answer = ... ml

(c) Write $12{\cdot}3719$ correct to 1 decimal place. [1]

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Answer = ...

2. Tomos visits a café. The menu prices for three items are shown below.

Sandwich	Cup of tea	Slice of cake
£3·80	£1·90	£2·50

(a) Tomos orders 2 sandwiches, 3 cups of tea and 2 slices of cake. [3]
Calculate the total cost of these items.

Total cost = £ .....

(b) An optional service charge of 10% is added to the bill from part (a). [2]
Calculate the amount of the service charge.

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Service charge = £ . . . . . .

(c) Tomos pays the bill from part (a) (**without** the service charge) using a £ 20 note. [3]
Calculate how much change he should receive.

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Change = £ . . . . . .

3. Bethan earns a take-home salary of £ 1,680 each month. Her regular monthly bills are shown in the table below.

Bill	Amount per month
Rent	£ 725·00
Electricity & gas	£ 118·40
Food shopping	£ 260·00
Phone & internet	£ 46·50

(a) Calculate the total amount Bethan spends on these bills each month. [3]

Total bills = £ .....

Bethan plans to save whatever is left of her salary each month after paying the bills above.

(b) Calculate how much Bethan can save each month. [3]

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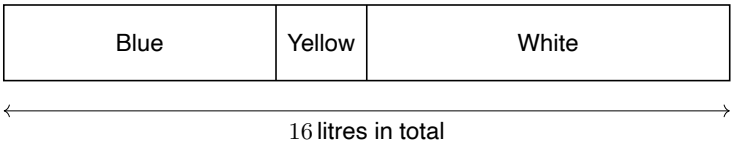
Monthly saving = £ . . . . . .

4. A decorator mixes blue, yellow and white paint in the ratio $3 : 1 : 4$ (blue : yellow : white) to make a shade of green.
She wants to make 16 litres of this green paint in total.



(a) Calculate how many litres of each colour she needs. [3]

. . . . . litres blue

. . . . . litres yellow

. . . . . litres white

The decorator has only 6 litres of blue paint left.

(b) Using all 6 litres of blue paint, and keeping to the same ratio of $3 : 1 : 4$, calculate the total amount of green paint she can now make. [3]

Total green paint = ... litres

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

Carys wants a new mobile phone plan. Two providers offer the following 12-month deals.

Provider P
Upfront cost: £60
Then £15 per month
for 12 months
(unlimited calls & data)

Provider Q
No upfront cost
£20 per month
for 12 months
(unlimited calls & data)

Determine which provider offers the cheaper plan over the full 12 months.
Write out your method in full sentences. Show clearly the total 12-month cost for each provider, compare the two totals, and state your conclusion. [6 + 2 OCW]

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Cheaper provider = ...

6. Rhys borrows £ $1{,}800$ from a credit union. The loan charges 5% *simple* interest per year, and Rhys agrees to repay the loan after 3 years.

Credit Union Loan
5% simple interest
per year
(interest charged on original amount only)

(a) Calculate the total amount of interest Rhys has to pay over the 3 years. [4]

Interest = £ .....

(b) Calculate the total amount Rhys repays at the end of the 3 years. [2]

Total repaid = £ .....

7. Part of a train timetable from Swansea to Bridgend is shown below.

Station	Train 1	Train 2	Train 3
Swansea	08:10	08:40	09:25
Neath	08:24	08:54	09:39
Port Talbot	08:36	09:06	09:51
Bridgend	08:55	09:25	10:10

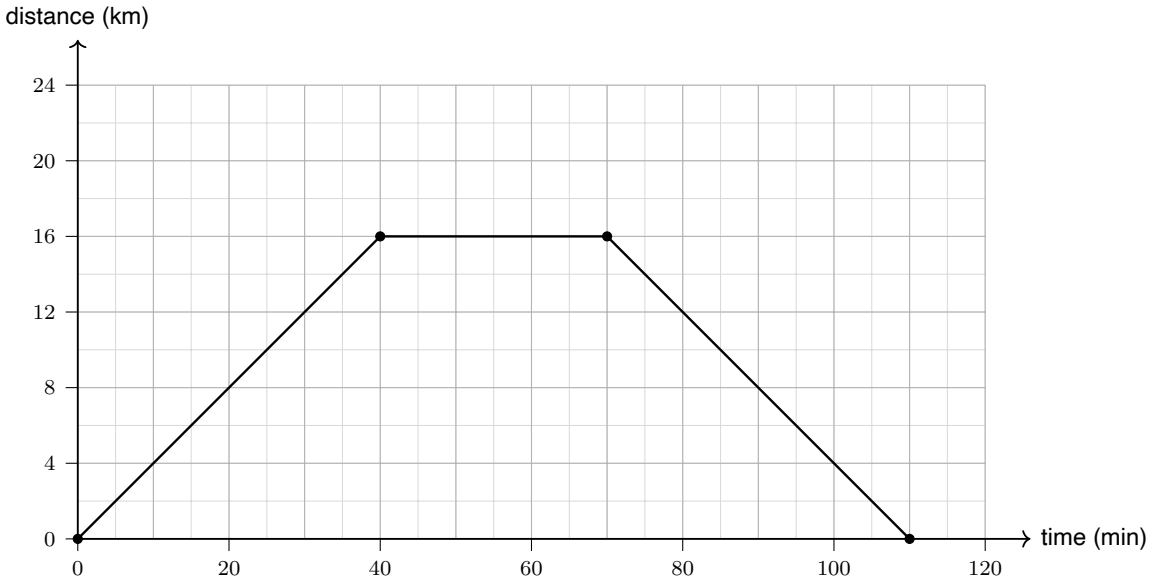
(a) Lowri needs to be in Bridgend by 09:30. [2]
Write down the latest time she can catch a train from Swansea.

Latest time = ...

(b) Calculate how long Train 3 takes to travel from Swansea to Bridgend. [2]
Give your answer in minutes.

Journey time = ... minutes

The distance-time graph below shows a cyclist's journey from her home to a friend's house and back.



(c) Use the graph to answer the following.

(i) Write down how long, in minutes, the cyclist stayed at her friend's house. [1]

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Stationary for = ... minutes

(ii) Calculate the average speed of the cyclist on the outward leg (from 0 to 40 minutes), [3] in km/h.

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Outward speed = ... km/h

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

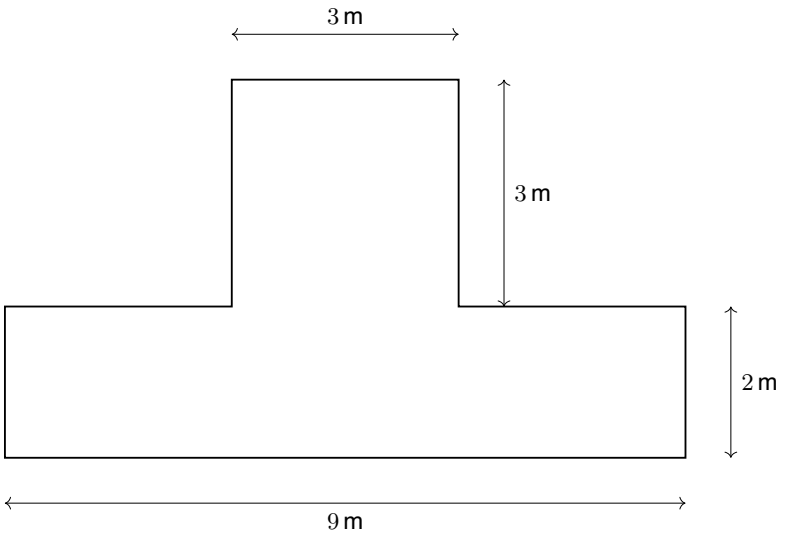

Diagram not drawn to scale

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

Perimeter = ... m

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

Area = ... m^2

(c) Paving slabs to cover the patio cost £ 32 per square metre. [2]
Calculate the total cost of paving the whole patio.

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Total cost = £ . . . . . .

9. The map below shows the positions of three shops in a town centre: the Post Office (P), the Library (L) and the Supermarket (S).
The map is drawn to a scale of 1 cm represents 50 metres.

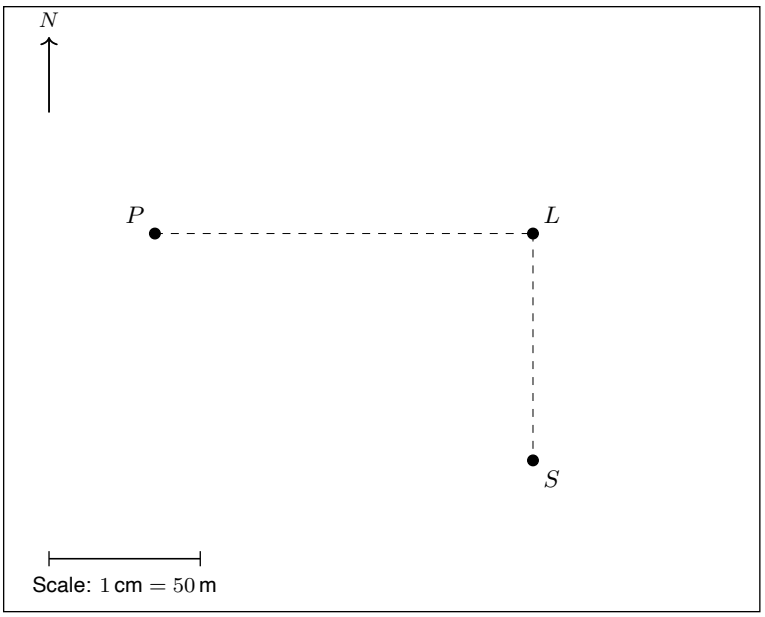

Diagram not drawn to scale

(a) The distance from P to L on the map is 5 cm. [3]
Calculate the real distance, in metres, from the Post Office to the Library.

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Real distance $PL =$ . . . . . m

(b) Write down the bearing of the Supermarket (S) from the Library (L). [3]

Bearing = ...

(c) A café (C) is on a bearing of $090°$ from the Supermarket (S) and is 100 m from the Supermarket. [3]
Mark the position of the café on the map with a cross, and label it C. Show your working below.

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END OF PAPER