

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4351/01

**MATHEMATICS (UNITISED SCHEME)
UNIT 1: Mathematics in Everyday Life
FOUNDATION TIER**

A.M. FRIDAY, 10 January 2014

1 hour 15 minutes

ADDITIONAL MATERIALS

A calculator will be required for this paper.

A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

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.

Take π as 3.14 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.

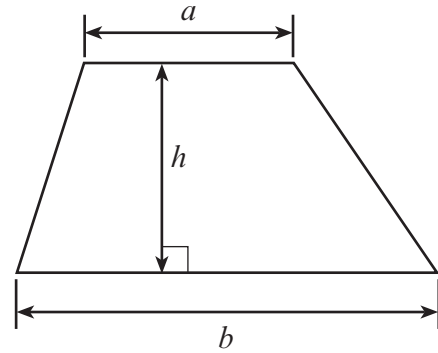
The number of marks is given in brackets at the end of each question or part-question.

You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 5(a).

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

Formula List

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



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



1. Harry has been shopping for his elderly neighbour.
The neighbour had given him the following list of items that she wanted.

<p>2 tins of salmon 3kg bag of potatoes 3 boxes of matches $\frac{1}{2}$kg of sausages</p>

- (a) Complete the bill shown below.

[4]

Item	Cost
2 tins of salmon at £2.69 each	£5.38
3 kg of potatoes at £1.15 per kg	
3 boxes of matches at 32p per box	
$\frac{1}{2}$ kg of sausages at £5.60 per kg	
TOTAL COST	

- (b) Harry was given two £10 notes by his neighbour to pay for the items bought.
How much change should Harry give his neighbour?

[2]

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2. Thirty-two competitors took part in a book quiz.
The points that each competitor gained in the quiz are shown below.

16	27	18	26	28	10	22	29
25	13	28	23	19	26	14	25
26	15	17	27	11	27	16	21
11	24	29	18	24	12	28	17

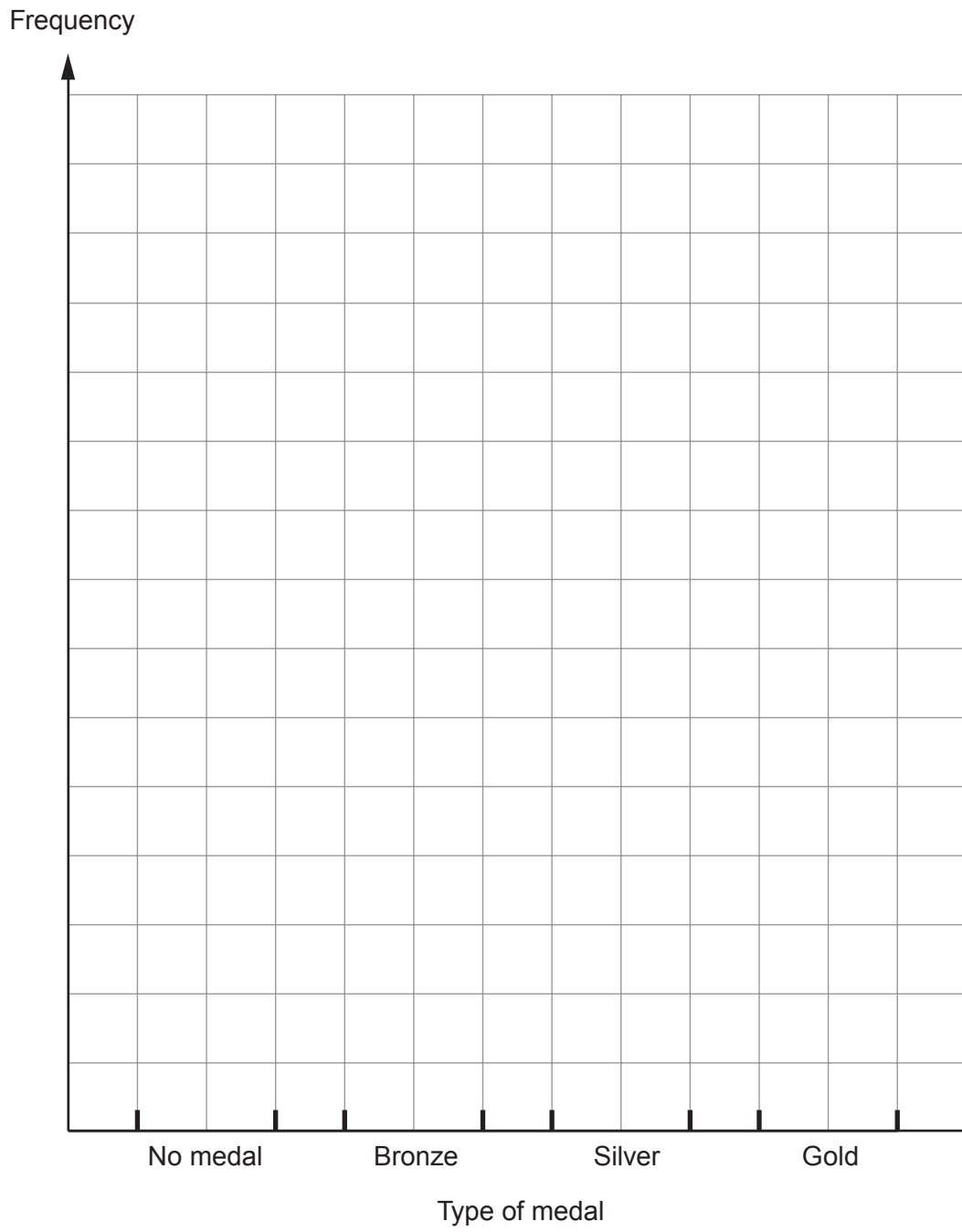
- (a) A table is drawn to summarise these results and to show the number of medals that were awarded at the end of the competition.

Complete the table by filling in the empty spaces.

You must make sure that all the intervals in the Points column are of equal width. [4]

Points	Tally	Number of competitors	Type of medal
10 to 14	/	6	No medal
15 to 19			Bronze
..... to			Silver
..... to 29			Gold

- (b) Using the squared paper on the next page, draw a suitable bar chart that shows how the medals were shared. [3]



3. Five people are timed on how long they take to complete a simple jigsaw.

A time of 25 seconds is given a score of 0.

Each second above 25 gains a score of +1.

For example, a person taking 27 seconds would score +2.

Each second below 25 gains a score of -1.

For example, a person taking 22 seconds would score -3.

The times taken by the five people were as follows.

Alice took 30 seconds,

Bob took 19 seconds,

Karim took 17 seconds,

Dewi took 32 seconds and

Elin took 21 seconds.

Complete the table below to show the **score** that each person was given.

The list should be in **ascending order**, starting with the person with the lowest score.

[4]

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Name					
Score					

4. Dylan uses the following formula to work out the 'miles per gallon' for his car.

$$\text{miles per gallon} = \frac{\text{miles travelled} \times 4.546}{\text{litres of fuel used}}$$

One weekend, Dylan travelled by car from Holyhead to Swindon.
He then went on to Cardiff before returning to Holyhead.

The distance travelled from Holyhead to Swindon was 256 miles.

The distance travelled from Swindon to Cardiff was 88 miles.

The distance travelled from Cardiff back to Holyhead was 227 miles.

Dylan used a total of 62 litres of fuel for these journeys.

Calculate the 'miles per gallon' for his car for this weekend.

Give your answer to the nearest whole number.

[4]

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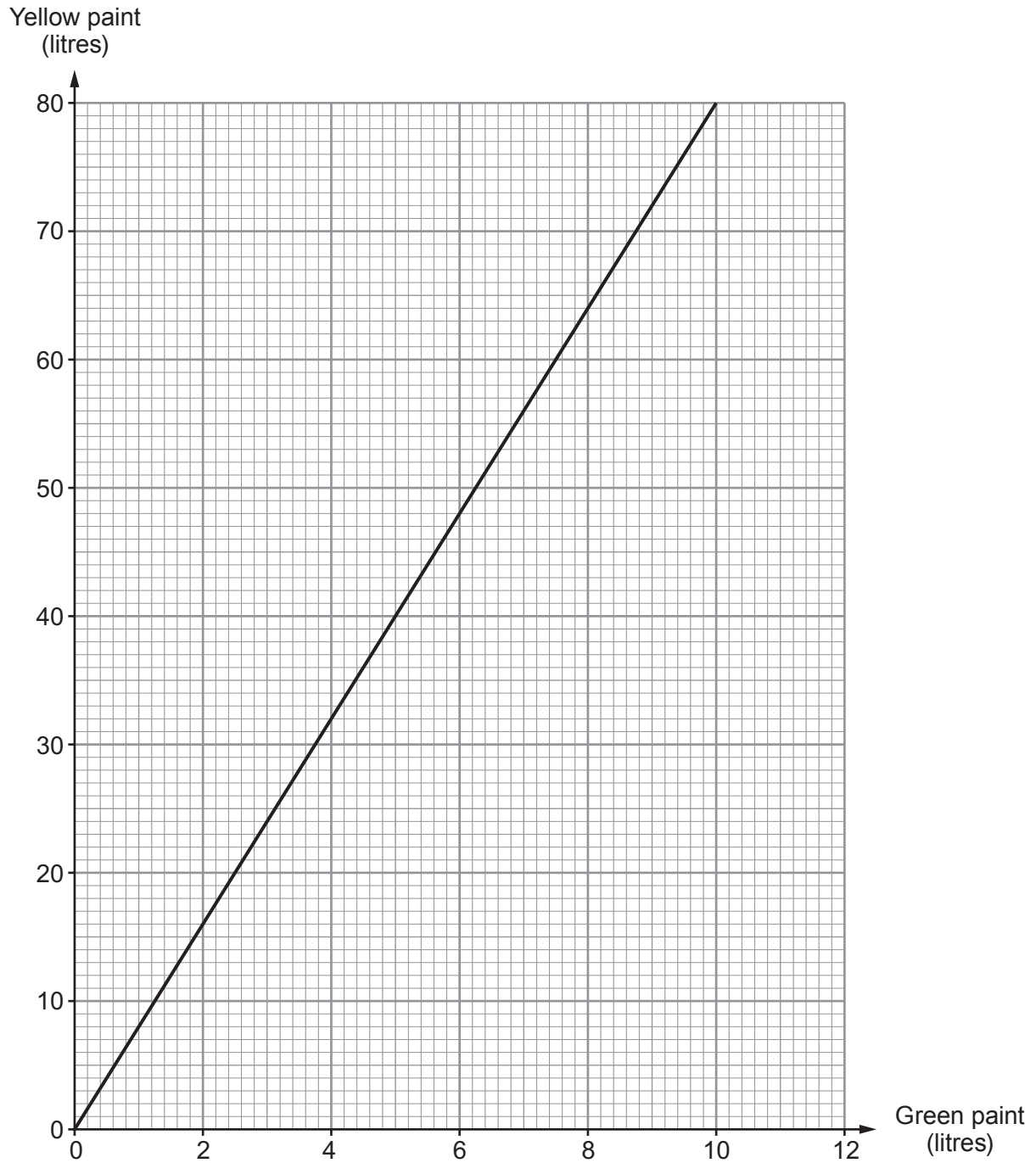
- (b) Gethin is asked to paint the logo.
He has enough orange paint but no blue paint.
At the local shop, blue paint costs £2.50 for a tin that will cover an area of 3 m^2 .
How much will Gethin have to pay to buy enough blue paint to cover the three wide strips? [2]

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6. A colour of paint, called 'Meadow', is made using green paint and yellow paint. The graph below shows how much green paint and yellow paint must be mixed together to make different amounts of 'Meadow' paint.



(a) What is the **total** amount of 'Meadow' paint produced when 10 litres of green paint are used? [1]

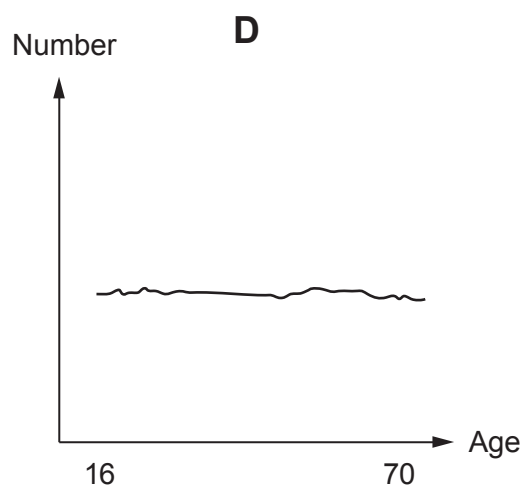
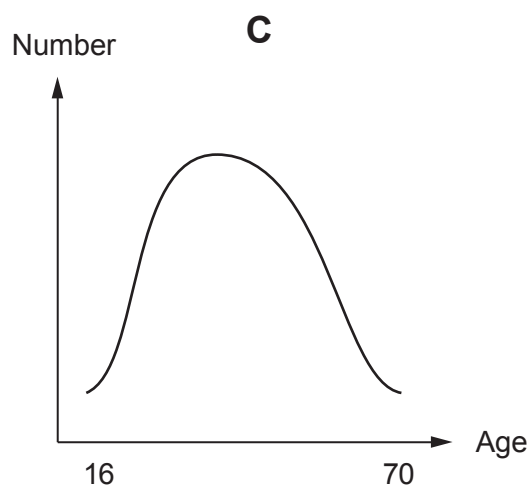
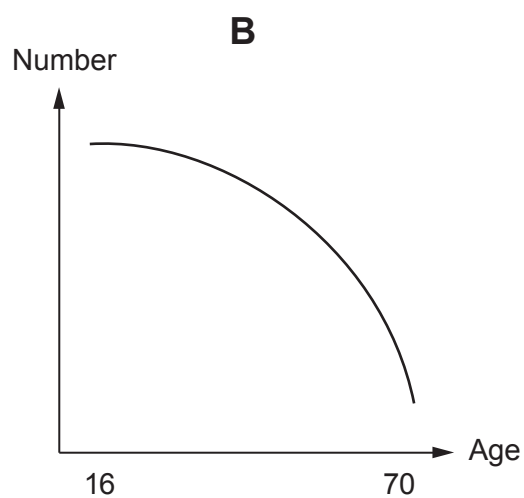
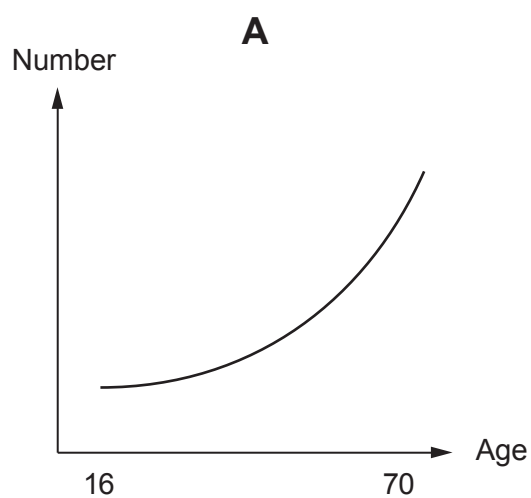
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(b) How much green paint should be mixed with 640 litres of yellow paint? [2]

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7. Look at the four graphs labelled **A**, **B**, **C** and **D** shown below.



Write down which graph **A**, **B**, **C** or **D**, in each case, is most likely to have the following titles.

[4]

‘The number of people in full-time employment.’

Graph

‘The number of people who play for a football team.’

Graph

‘The number of people who wear glasses.’

Graph

‘The number of people who are left-handed.’

Graph

8. Aled weighs 12 stone 8 pounds. Thomas weighs 85 kilograms.
Which of the two is the heavier, and by how much?

[5]

1 stone = 14 pounds.

1 kilogram is approximately 2.2 pounds.

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9. At a stall in a school fair, thirty-two people each paid £3 to choose a sealed envelope from a bag. Each envelope contained a shopping voucher.

The table below shows the number of each type of voucher in the bag.

Value of voucher	Number of vouchers
£1	15
£2	10
£5	5
£10	2

- (a) The person in charge of the stall was asked,
 "What was the average value of the vouchers?"
 She replied,
 "Are you asking for the mode, the median or the mean value?"
 Show clearly that these three values are different.

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(b) Did this stall make a profit or a loss?
You must calculate the amount of this profit or loss.

[2]

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10. Shafira had collected £720 in a sponsored event.

She gave $\frac{1}{4}$ of the amount collected to her local youth club.

She gave $\frac{2}{5}$ of the amount collected to a children's hospital.

The rest of the money she gave to a mountain rescue group.

(a) How much money did Shafira give to the mountain rescue group?

[4]

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(b) What percentage of the £720 did Shafira give to the mountain rescue group?

[2]

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11. Asif used his calculator to find the value of

$$\frac{85 \times 43}{17 + 35}$$

He pressed the following buttons on his calculator in this order.



The answer he got was 250. This answer is incorrect.

(a) Explain what Asif did wrong.

[1]

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(b) Find the correct value of

$$\frac{85 \times 43}{17 + 35}$$

Write your answer correct to 3 significant figures.

[2]

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12. Mair will be competing in a half-marathon race.

She uses a route for training that is 10 000 metres long, measured correct to the nearest 100 metres.

Her first complete training run took 73 minutes, measured correct to the nearest minute.

Complete the table below to show the least and greatest distance of her route and the least and greatest time of her training run. [4]

	Least Value	Greatest Value
Distance metres metres
Time minutes minutes

13. Grace invests £8240 for 2 years at 3% per annum compound interest.
Find the compound interest earned in the 2 years.
Your answer should be given correct to the nearest penny.

[4]

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END OF PAPER