

Candidate Name	Centre Number	Candidate Number

WELSH JOINT EDUCATION COMMITTEE
General Certificate of Secondary Education



CYD-BWYLLGOR ADDYSG CYMRU
Tystysgrif Gyffredinol Addysg Uwchradd

179/02

ADDITIONAL MATHEMATICS

PILOT EXAMINATION

SPECIMEN PAPER 2

(1½ hours)

ADDITIONAL MATERIALS

A calculator will be required for this paper.

INSTRUCTIONS TO CANDIDATES

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 especially when a calculator is used.

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.

No certificate will be awarded to a candidate detected in any unfair practice during the examination.

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	4	
2	4	
3	5	
4	6	
5	6	
6	4	
7	6	
8	7	
9	4	
10	4	
11	4	
12	8	
13	6	
14	5	
15	7	
TOTAL MARK		

1. Tony and Bob have four numbers on a shared lottery ticket, they decide to share the money they won in the ratio 7:4. Tony realises that if he spends 10% of his prize money immediately, he will still be left with the £195.30 which he owes his garage for repairs to his car.
Find the total of the prize money won by Tony and Bob.

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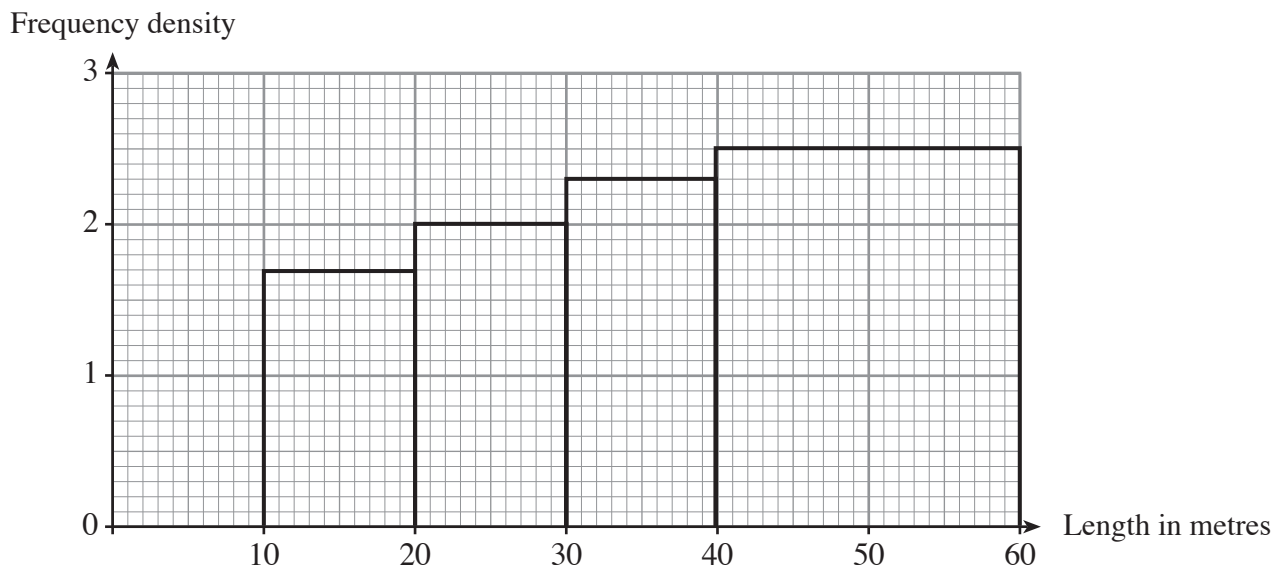
[4]

2. A cyclist rides from Cwm to Dinerth, and back again without stopping, a **total** distance of 20 km. The return journey from Dinerth to Cwm is uphill and takes 16 minutes longer than the journey from Cwm to Dinerth. The average speed for the entire journey is 10 km/h. Find the average speed for the first part of the journey from Cwm to Dinerth. Give your answer in km/h correct to one decimal place.

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[4]

9. A survey of the lengths of anchor lines for small boats was carried out. A histogram has been drawn to illustrate the results of the survey.



Use the histogram to find an estimate for the seventieth percentile.

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[4]

10. The diagram shows a concrete paving slab.

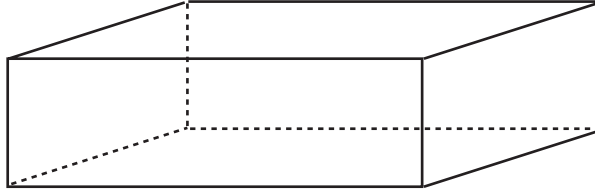


Diagram not drawn to scale.

A garden designer suggests that all the dimensions should be increased by 20%. Find the percentage increase in the volume of concrete required.

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[4]

11. Find $\frac{dy}{dx}$ for **each** of the following.

(a) $y = 3x^6 - 5x$

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[2]

(b) $y = x^{-4} + 8$

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[1]

(c) $y = x^{\frac{1}{3}}$

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[1]

14. (a) Find $\int (x^5 + 7) dx$.

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[2]

(b) Find $\int (4x^6 + \frac{1}{x^4}) dx$.

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[3]

