

Real Life Graphs

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

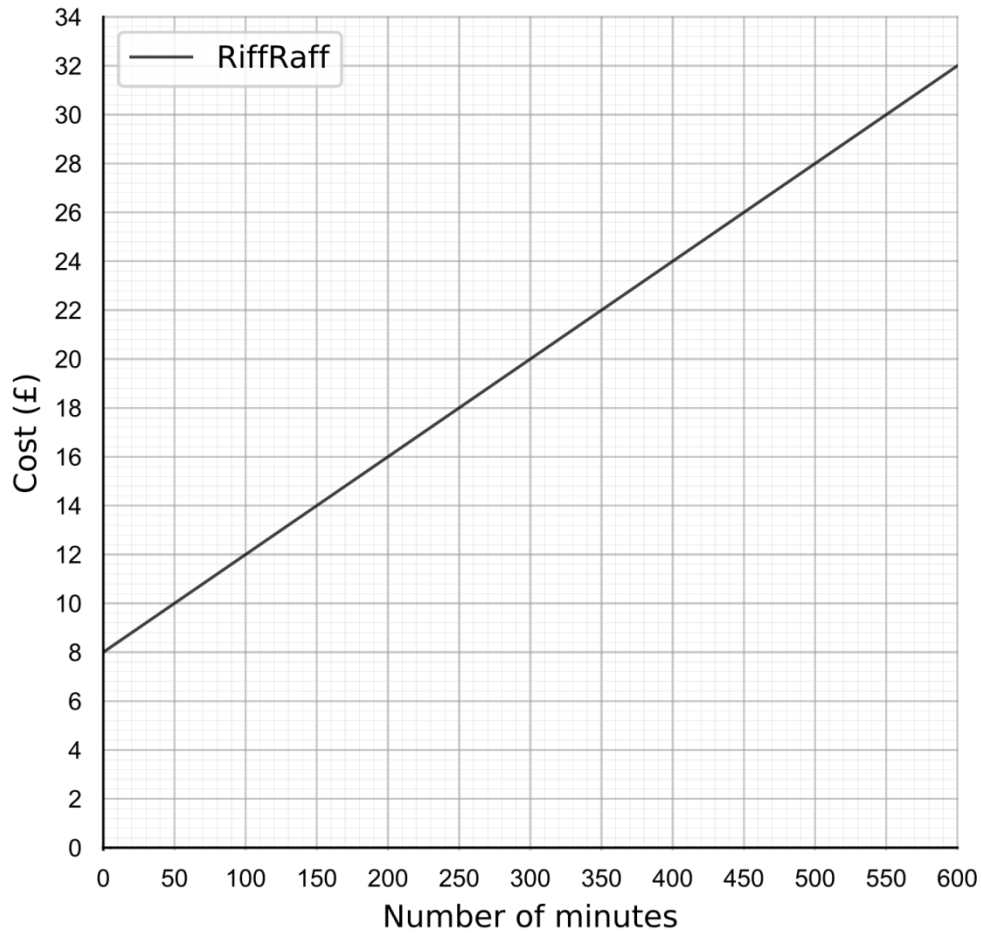
Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

- 1 The cost-per-minute of call time used on a monthly phone contract for RiffRaff is displayed in the graph below.



- 1(a) A customer uses 150, 300, and 50 minutes in three consecutive months.
What is the total cost of the contract over the three months?

[3 marks]

Answer _____

Turn over ►

- 1(b)** Using the graph, find an equation for the total cost per month, C , in terms of minutes used M .

[1 mark]

Answer _____

- 1(c)** What does the y-intercept in your equation represent?

[1 mark]

Answer _____

- 1(d)** A rival company, Purple, has a monthly contract that follows the formula below:

$$C = 12 + 0.02M$$

Where C is the cost in pounds, and m in the number of minutes used.

On the same axes, draw a graph and determine the price and number of minutes where both contracts have the same value.

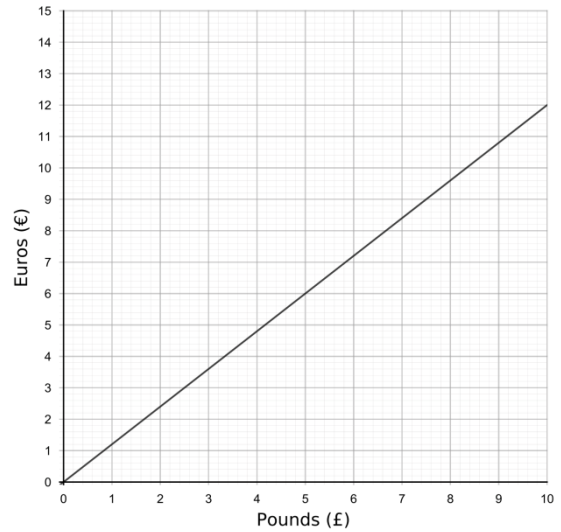
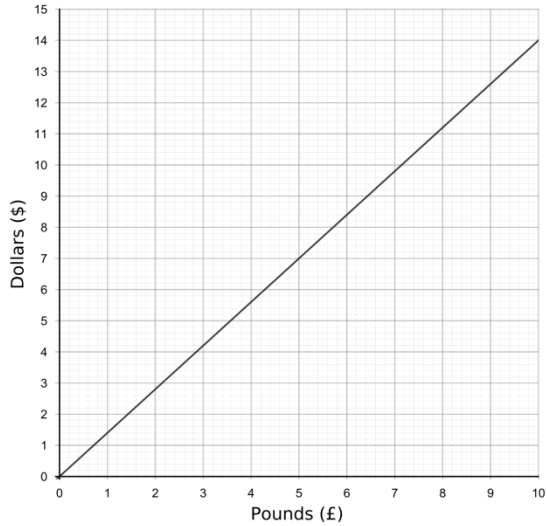
[3 marks]

Answer _____

Turn over for next question

Turn over ►

2 The conversion graphs below show the relationship between the value of the pound and dollar, and the value of the pound and euro.



2(a) After a holiday Ben has \$441 and €318 remaining.
What is the total value of Ben's remaining money in pounds?

[3 marks]

Answer _____

2(b) Convert \$252 into euros.

[2 marks]

Answer _____

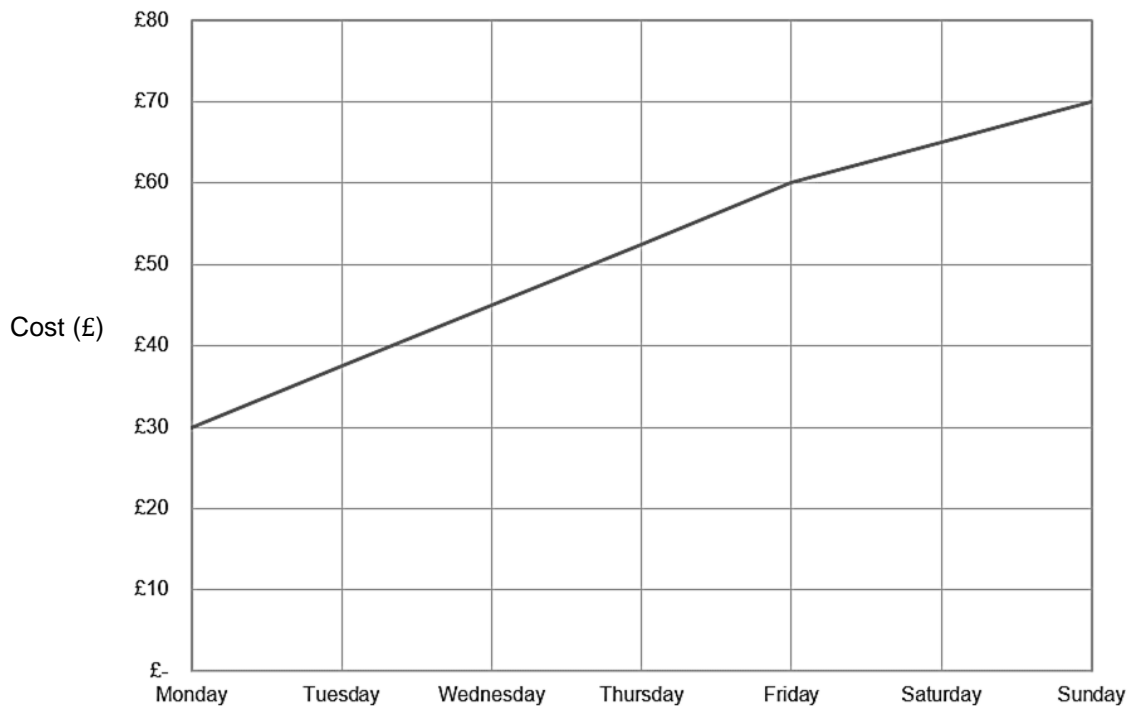
Turn over for next question

Turn over ►

- 3 The table shows the costs of bicycle hire from two companies, WeBike and Wheely Good.

	Initial Payments	Additional daily costs	
		Weekdays	Weekends
WeBike	£20.00	£5.00	£15.00
Wheely Good	£30.00	£7.50	£5.00

The total cost of the bicycle from Wheely Good has been plotted on the graph below.



Plot the total cost for WeBike on the graph, and **evaluate** which company is better value for money for a week-long bicycle hire.

[4 marks]

Answer _____

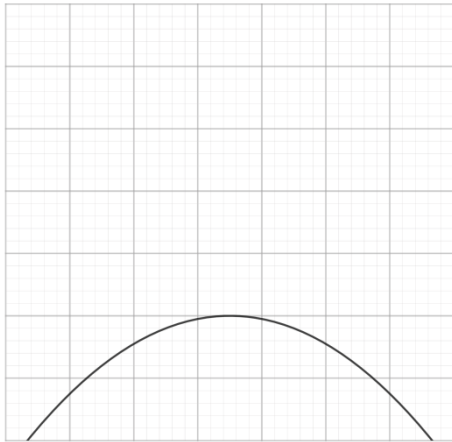
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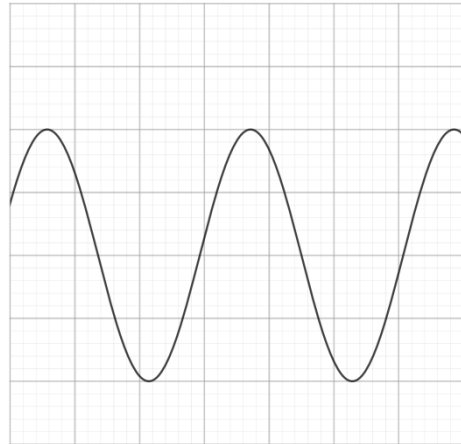
4 Describe each of the graphs below, making sure to consider the gradient, any turning points and the shape of the graph.

Additionally, suggest what the graph could represent.

Graph A



Graph B



4(a) Graph A:

[2 marks]

Answer _____

4(b) Graph B:

[2 marks]

Answer _____



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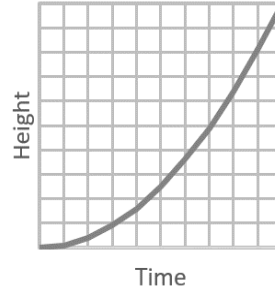
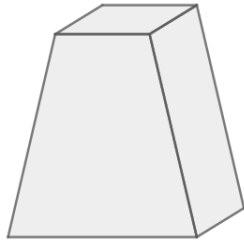
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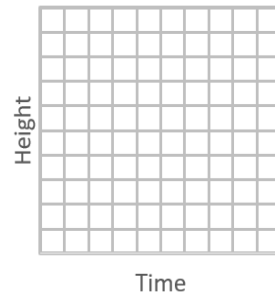
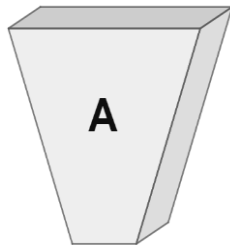
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- 5 The diagram shows a container that is filled with water at a constant rate.
The graph shows the height of the water increasing until the container is full.



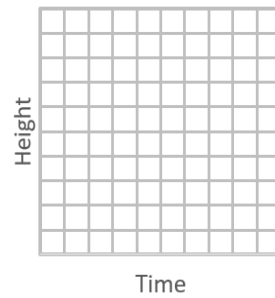
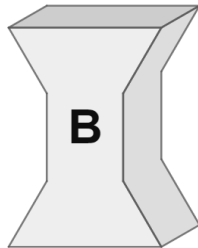
Complete the graph for each of the three containers, A, B and C.
In each case the rate at which water flows into the container is constant.

5(a)



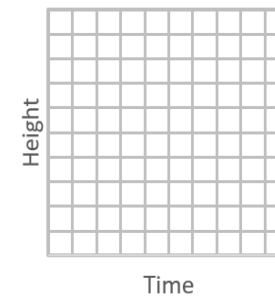
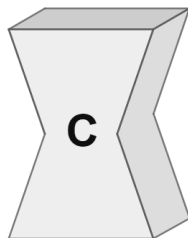
[1 mark]

5(b)



[1 mark]

5(c)



[1 mark]

End of questions

END