

## Pre Public Examination

GCSE Mathematics (Edexcel style)

March 2017

Foundation Tier

## Paper 2F

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Name .....

Class .....

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### TIME ALLOWED

1 hour 30 minutes

### INSTRUCTIONS TO CANDIDATES

- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- **You are permitted to use a calculator in this paper.**
- Do all rough work in this book.

### INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question on the Question Paper.
- **You are reminded of the need for clear presentation in your answers.**
- The total number of marks for this paper is **80**.

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Question	Mark	Out of
1		1
2		1
3		1
4		1
5		2
6		2
7		2
8		3
9		2
10		3
11		3
12		3
13		3
14		2
15		3
16		6
17		3
18		1
19		2
20		3
21		3
22		4
23		4
24		4
25		2
26		4
27		5
28		3
29		4
Total		80

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

**Question 1.**

Work out  $2.3^3$

.....

**(Total 1 mark)**

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**Question 2.**

There are only toffee sweets and caramel sweets in a bag.

$\frac{3}{8}$  of the sweets are toffee.

Write down the ratio of toffee sweets to caramel sweets.

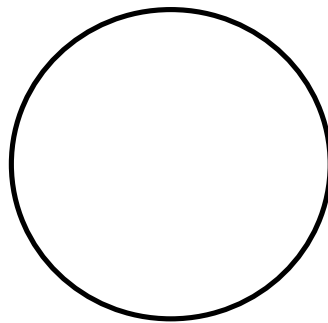
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**(Total 1 mark)**

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**Question 3.**

Draw a sector on this circle

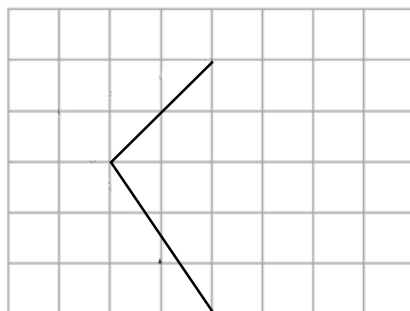


**(Total 1 mark)**

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**Question 4.**

On the grid, complete the diagram of a kite.



**(Total 1 mark)**

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**Question 5.**

A café sells the following sandwiches and crisps.

<b>Sanwiches</b>	<b>Crisps</b>
Cheese and Ham	Cheese and Onion
Tuna and Sweetcorn	Prawn Cocktail
Cheese and Tomato	Barbeque Beef
Chicken and Salad	Ready Salted

Samantha orders a sandwich and a packet of crisps.

Write down all the possible combinations of sandwiches and crisps that Samantha could have.

.....

.....

.....

**(Total 2 marks)**

**Question 6.**

The  $n$ th term of a sequence of numbers is  $7n + 3$

(a) Is 227 a term of the sequence?  
You must explain your answer.

.....

.....

**(1)**

(b) Rizvana says,

“No terms of the sequence are multiples of 3”

Give an example to show Rizvana is wrong.

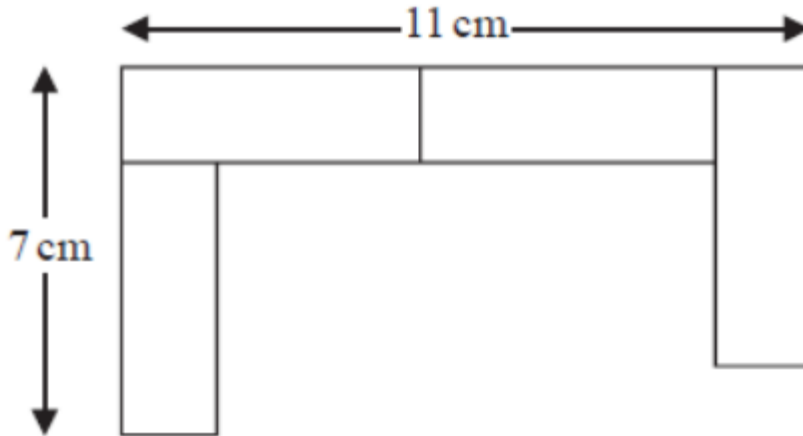
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**(1)**

**(Total 2 marks)**

**Question 7.**

A pattern is made using identical rectangular tiles.  
Find the total area of the pattern.



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**(Total 2 marks)**

**Question 8.**

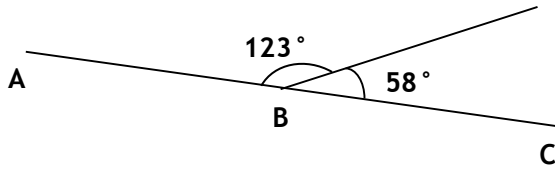
A road map has a scale of 1 : 70 000  
The length of a road on the map is 6.25cm.

Work out the length of the real road in kilometres.

..... km

**(Total 3 marks)**

**Question 9.**



Aiysha says,

“*ABC* cannot be a straight line.”

Explain why Aiysha is correct.

.....  
.....

**(Total 2 marks)**

**Question 10.**

Uzma is planning a dinner party for 12 adults.  
She is planning to give each adult a 425g chicken fillet.

1 kg of chicken costs £3.25.

Work out how much Uzma will have to pay for the chicken.

£.....

**(Total 3 marks)**

**Question 11.**

Ameena thinks of a whole number.  
She multiplies the number by 4.  
Ameena's answer is 53.

(a) Explain how you know Ameena's answer is wrong.

.....  
.....

**(1)**

Here is a number machine.



Mariyam says that when the output is 45 the input is 450

Here is her working.

$$45 + 5 = 50$$
$$50 \times 9 = 450$$

Mariyam is wrong.

(b) Explain what she has done wrong.

.....  
.....

**(2)**

**(Total 3 marks)**

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**Question 12.**

Work out the value of

$$\frac{\sqrt{3.2} + 7.4}{5.6 - 2.9}$$

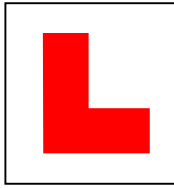
Give your answer correct to 2 decimal places.

.....  
**(Total 3 marks)**

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**Question 13.**

Adam is learning to drive.  
He plans on taking 19 lessons before he takes his driving test.  
He sees the offer below on the internet.



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**Lessons - 1 hour each**

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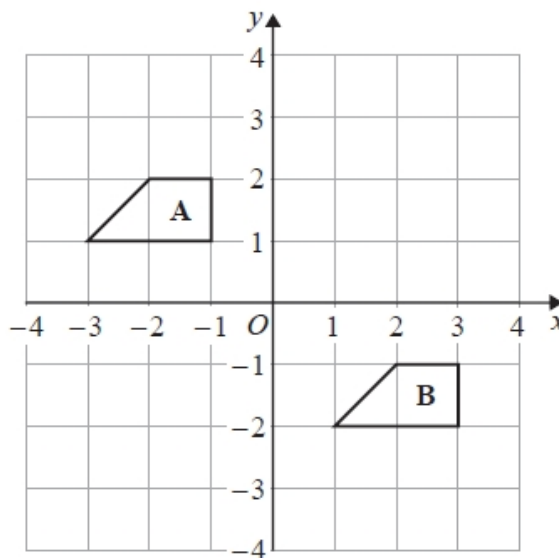
£16 per lesson  
**Special Offer**  
£168 for 12 lessons

Work out the most money that Adam can save by using the Special Offer.

.....  
**(Total 3 marks)**

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**Question 14.**



Describe fully the single transformation that maps shape **A** onto shape **B**.

.....  
.....

**(Total 2 marks)**

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**Question 15.**

$\frac{11}{40}$  of the people at a wedding celebration are men.

34% of the people at the wedding are women.

The rest of the people at the wedding are children.

Works out what percentage of the people at the wedding celebration are children.

.....%

**(Total 3 marks)**



**Question 16.**

Bob, Bill and Ben are triplets. They decide to paint their bedroom in the school holidays.

The total area of the wall space that needs painting is  $96\text{m}^2$

The paint that the triplets buy costs £3.60 per tin and each tin covers  $9\text{m}^2$ .

(a) Calculate the total cost of painting the bedroom.

£.....

**(3)**

The triplet's friend Fred says he can get the job done in 3 hours.

Fred offers to paint the room for £14 per hour which includes the cost of the paint he will use.

The triplets want to spend as little money as possible.

(b) Should they hire Fred or do the job themselves?

You must explain your answer clearly showing your workings.

**(3)**

**(Total 6 marks)**

**Question 17.**

In January David invested £345 in his bank account.  
At the end of February he had a total of £505 in his bank account.

In March David invested some more money in his bank account.  
The total interest he made by the end of April was 15% greater than the total interest he made in January and February.

In May David wants to pay a bill of £25.  
David thinks that the 15% extra interest he made in March and April will be enough to pay this bill.

Is David correct?  
You must show all your working.

**(Total 3 marks)**

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**Question 18.**

Solve  $9 = \frac{324}{x}$

$x = \dots\dots\dots$

**(Total 1 mark)**

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**Question 19.**

Write an integer in the box to make the statement true.

$$\frac{5}{8} > \frac{10}{\square}$$

Explain why the statement is true.

.....  
.....  
.....

**(Total 2 marks)**

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**Question 20.**

A laptop has a normal price of £1035.  
In a sale the price is reduced by 41%.

Work out the price of the laptop in the sale.

£.....

**(Total 3 marks)**

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**Question 21.**

The diagrams show two identical squares.

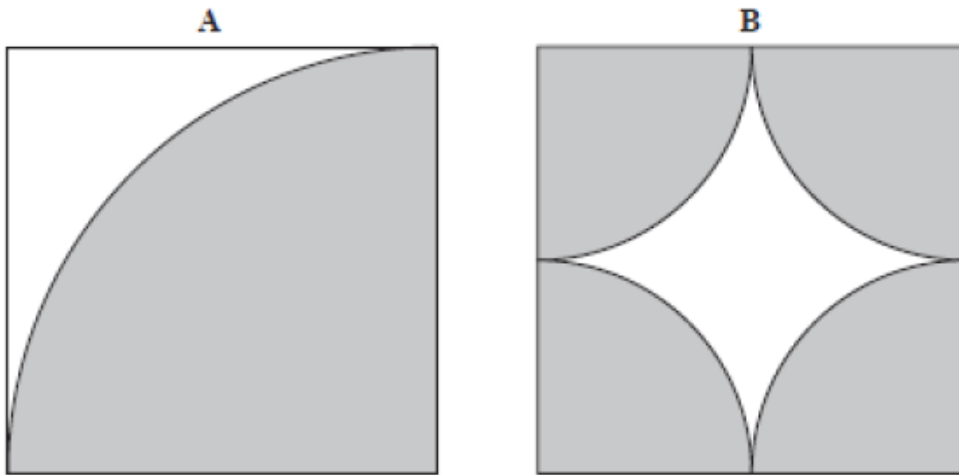


Diagram A shows a quarter of a circle shaded inside the square.

Diagram B shows four identical quarter circles shaded inside the square.

Show that the area of the region shaded in diagram A is equal to the area of the region shaded in diagram B.

**(Total 3 marks)**

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**Question 22.**

There are 180 members of the swimming club.

The pie chart shows the proportion of men and the proportion of women in the club.

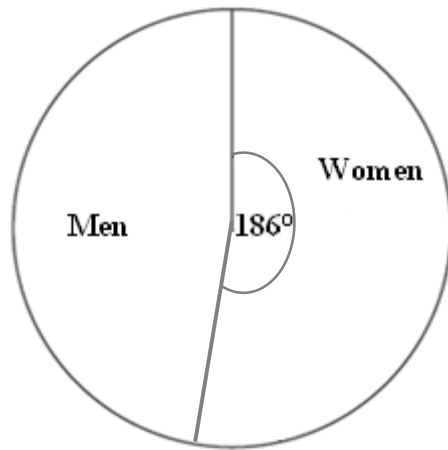


Diagram Not to Scale

There are 13 more women in the badminton club than in the swimming club.

There are 27 fewer men in the badminton club than in the swimming club.

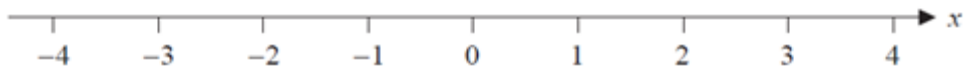
Brian draws a pie chart to show the proportion of men and the proportion of women in the badminton club.

Work out the angle of the sector in Brian's pie chart that represents women in the Badminton club.

**(Total 4 marks)**

**Question 23.**

Here is a number line.



(a) On this number line, show the inequality  $-3 \leq x < 1$

**(2)**

(b) Solve  $4n + 5 > 22$

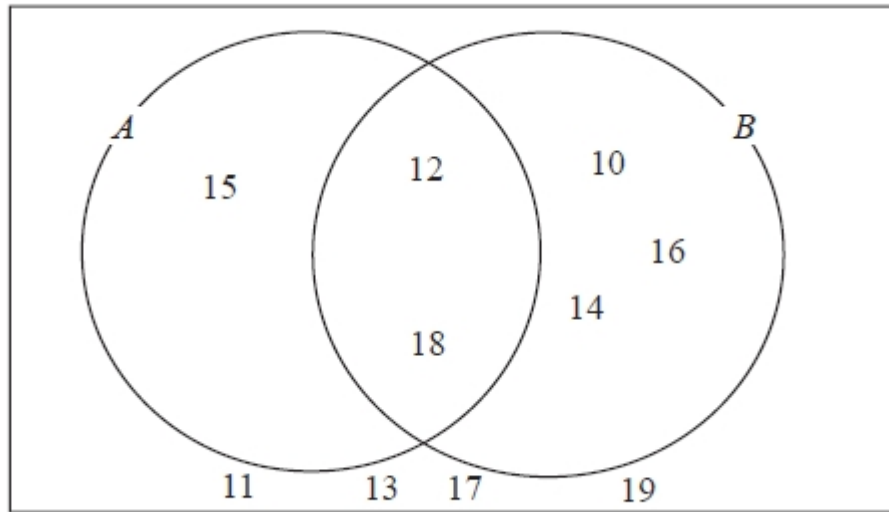
.....  
**(2)**

**(Total 4 marks)**

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**Question 24.**

Here is a Venn diagram.



(a) Write down the numbers that are in set

(i)  $A \cup B$

.....

(ii)  $A \cap B$

.....

**(2)**

One of the numbers in the diagram is chosen at random.

(b) Find the probability that the number is in set  $A'$

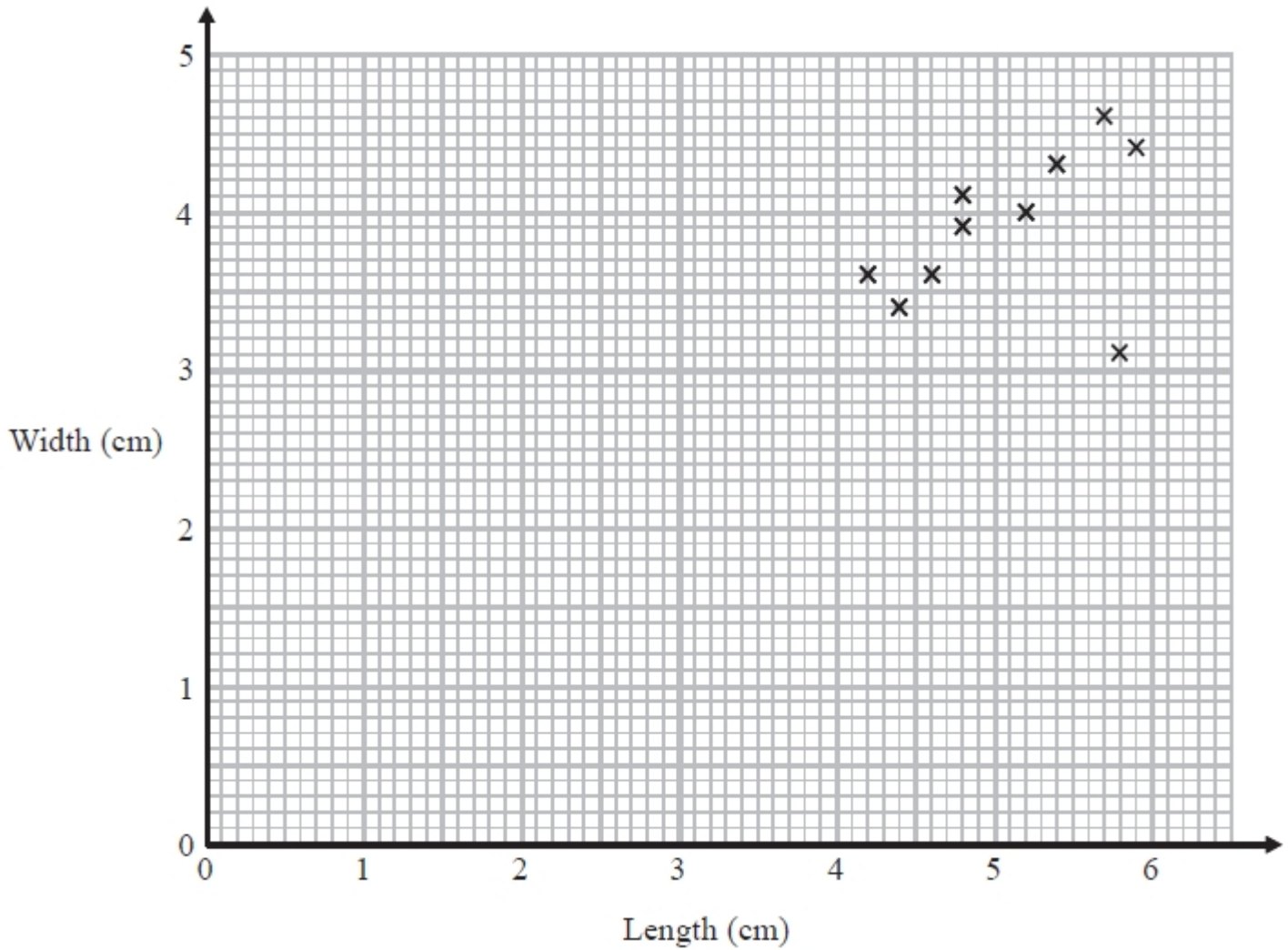
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**(2)**  
**(Total 4 marks)**

**Question 25.**

Katie measured the length and the width of each of 10 pine cones from the same tree.

She used her results to draw this scatter graph.



(a) Describe one improvement Katie can make to her scatter graph.

.....  
.....

**(1)**

The point representing the results for one of the pine cones is an outlier.

(b) Explain how the results for this pine cone differ from the results for the other pine cones.

.....  
.....

**(1)**

**(Total 2 marks)**

**Question 26.**

Triangle  $ABC$  has perimeter 20 cm.

$$AB = 7 \text{ cm.}$$

$$BC = 4 \text{ cm.}$$

By calculation, deduce whether triangle  $ABC$  is a right-angled triangle.

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**(Total 4 marks)**



**Question 27.**

The Singh family and the Peterson family go to the cinema.

The Singh family buy 2 adult tickets and 3 child tickets.

They pay £28.20 for the tickets.

The Peterson family buy 3 adult tickets and 5 child tickets.

They pay £44.75 for the tickets.

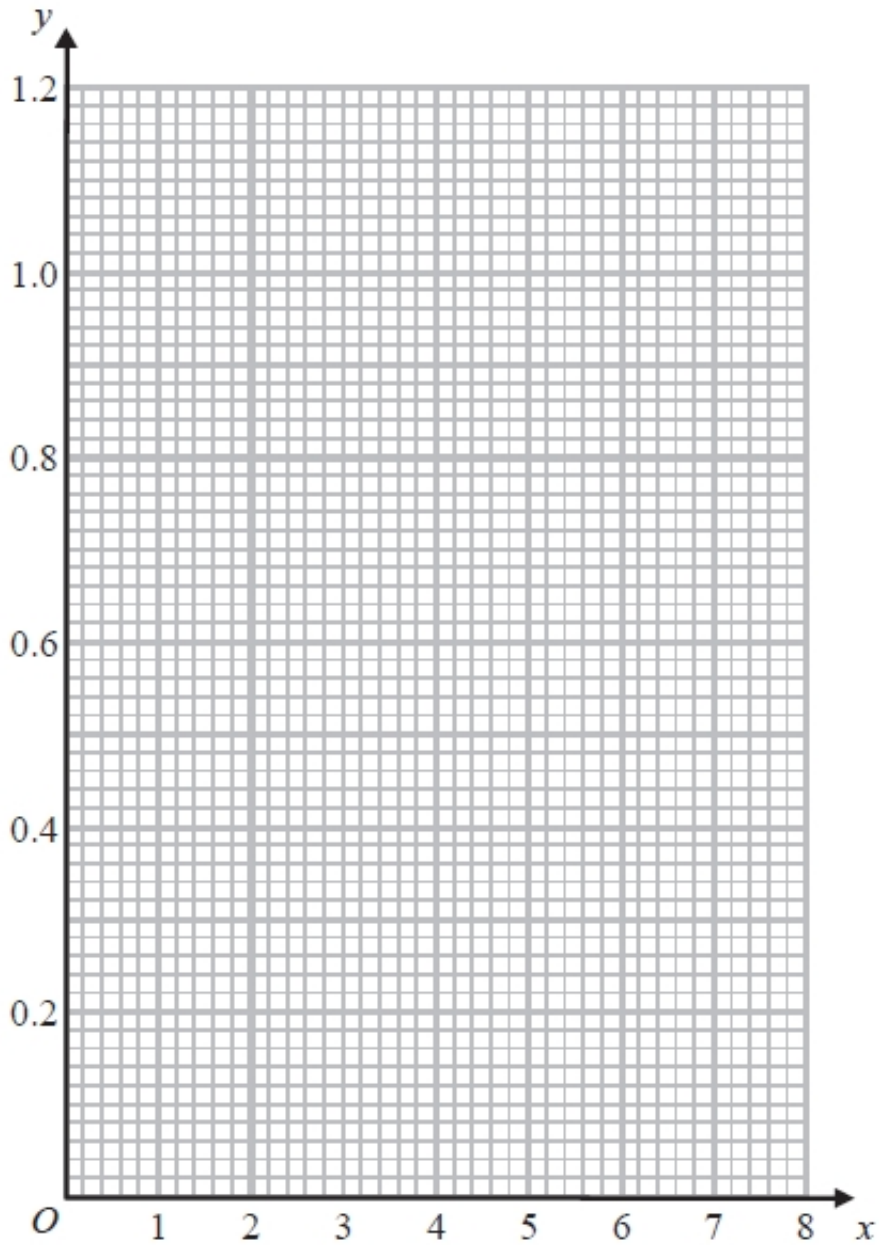
Find the cost of each adult ticket and each child ticket.

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**(Total 5 marks)**

**Question 28.**

On the grid, draw the graph of  $y = \frac{1}{x}$  for values of  $x$  from 1 to 7



**(Total 3 marks)**

**Question 29.**

Asif is going on holiday to Turkey.

The exchange rate is  $\text{£}1 = 3.5601$  lira.

Asif changes  $\text{£}550$  to lira.

- (a) Work out how many lira he should get.  
Give your answer to the nearest lira.

..... lira  
**(2)**

Asif sees a pair of shoes in Turkey.

The shoes cost 210 lira.

Asif does not have a calculator.

He uses  $\text{£}2 = 7$  lira to work out the approximate cost of the shoes in pounds.

- (b) Use  $\text{£}2 = 7$  lira to show that the approximate cost of the shoes is  $\text{£}60$

**(2)**  
**(Total 4 marks)**

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**TOTAL FOR PAPER IS 80 MARKS**