AQA

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

GCSE
APPLICATIONS OF MATHEMATICS (LINKED PAIR)

F

Foundation Tier Unit 1 Finance and Statistics

Thursday 9 June 2016 Morning Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
- a calculator
- mathematical instruments.

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- 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.
- If your calculator does not have a π button, take the value of π to be 3.14 unless another value is given in the question.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- The quality of your written communication is specifically assessed in Question 19. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

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

Answer **all** questions in the spaces provided.

1 A hockey team played 24 matches.
The number of goals the team scored in each match is shown.

1	0	2	1	0	3	1	1
0	2	0	4	2	1	2	2
1	0	1	2	1	0	0	1

1 (a) Complete the table.

[2 marks]

Number of goals	Tally	Frequency
0		
1		
2		
3 or more		

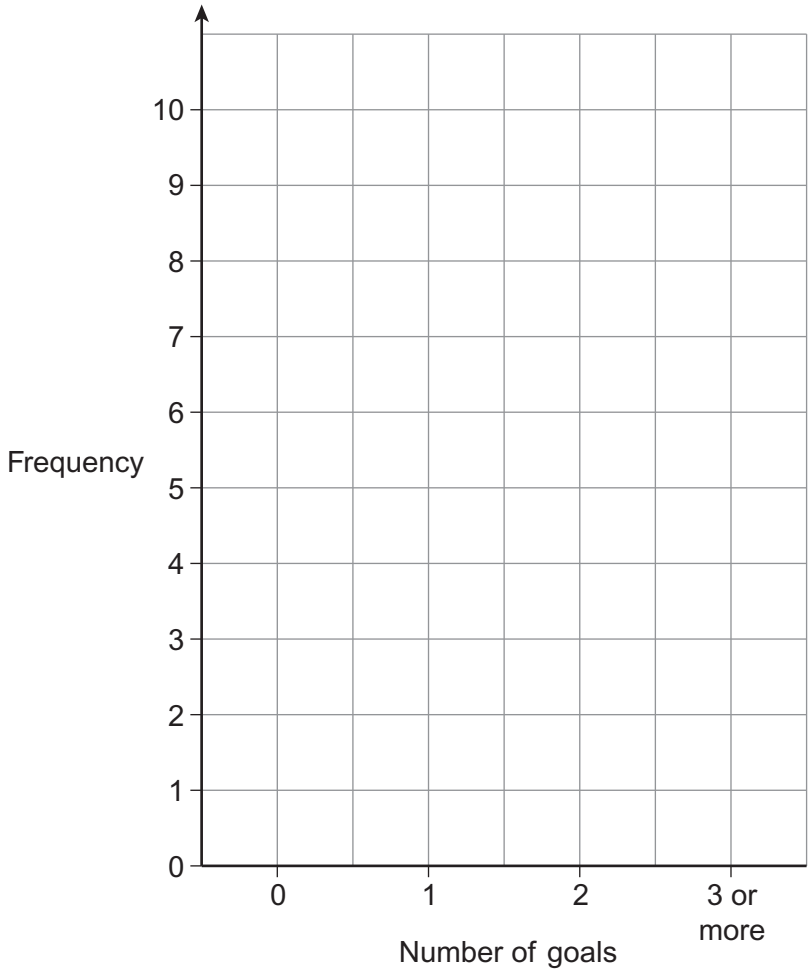
1 (b) Write down the mode.

[1 mark]

Answer _____

1 (c) Draw a vertical line graph to show the information in the table.

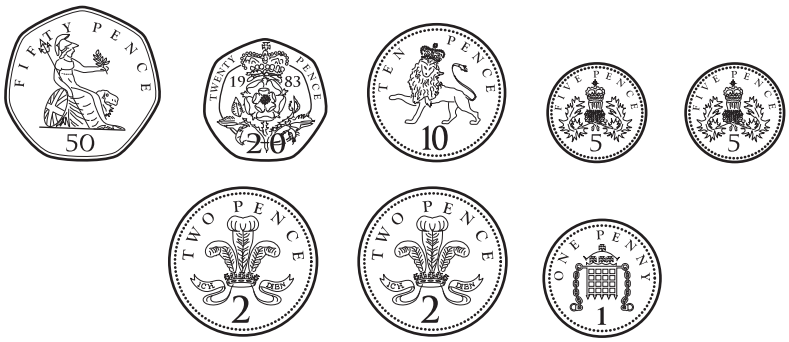
[2 marks]



Turn over for the next question

5

2 Jack has these coins.



Rosie has these coins.

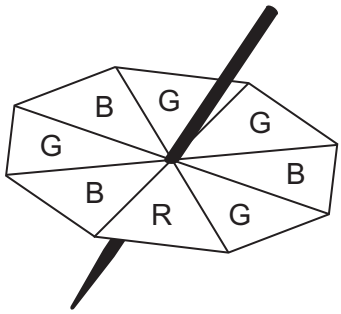
Jack gives some of his coins to Rosie.
Now they both have the same amount of money.

Which coins did Jack give to Rosie?

[3 marks]

Answer _____

3 A fair spinner has eight equal sections.
The sections are coloured as red (R), blue (B) or green (G) as shown.



The spinner is spun once.

3 (a) Circle the word that describes the probability of the spinner landing on green.

[1 mark]

impossible unlikely evens likely certain

3 (b) Circle the word that describes the probability of the spinner landing on yellow.

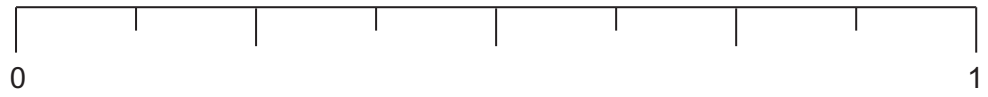
[1 mark]

impossible unlikely evens likely certain

3 (c) A probability scale is shown below.

Draw an arrow (↓) on the scale to show the probability of the spinner landing on blue.

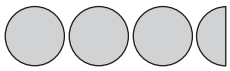
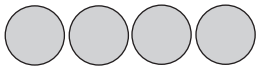
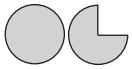
[1 mark]



6

4 The pictogram shows information about the houses in a village.

Key:  represents 4 houses

2-bedroom houses	
3-bedroom houses	
4-bedroom houses	
5-bedroom houses	

4 (a) How many 3-bedroom houses are there?

[1 mark]

Answer _____

4 (b) Show that there are 40 houses in total.

[2 marks]

4 (c) What fraction of the houses are 2-bedroom houses?
Give your answer in its simplest form.

[2 marks]

Answer _____

5 Ravi has £420

He spends $\frac{1}{4}$ of the money on clothes.

He spends $\frac{2}{5}$ of **the rest** of the money on computer games.

How much money does he have left?

[4 marks]

Answer £ _____

Turn over for the next question

9

6 Here is the price list at an ice-cream shop.

Cone	£1.25
Tub	£1.15
Extra scoops	75p each
Toppings	25p each

6 (a) Eva buys a tub with two extra scoops and one topping.

How much does she pay?

[2 marks]

Answer £ _____

6 (b) Eva pays with a £5 note.

How much change should she get?

[1 mark]

Answer £ _____

6 (c) Three friends each buy a cone or a tub.

No one has toppings.

Some of the friends buy extra scoops.

Altogether they spend exactly £6.65

How many extra scoops do they buy?
You **must** show your working.

[4 marks]

Answer _____

Turn over for the next question

7

7 Pete is a plumber.
He uses this formula to work out his charge, in pounds (£), for a job.

Charge = 20 + 38 × number of hours the job takes

7 (a) How much does Pete charge for a job that takes $3\frac{1}{2}$ hours?

[2 marks]

Answer £ _____

7 (b) Pete charges £286 for a job.

How many hours does the job take?

[3 marks]

Answer _____ hours

8 Chris buys

1.5 kg of apples

2.25 kg of strawberries

and

0.4 kg of cherries.

He spends £11.15

Apples cost £2.26 per kg

Strawberries cost £2.80 per kg

Work out the cost per kg of the cherries.

[5 marks]

Answer £ _____

Turn over for the next question

10

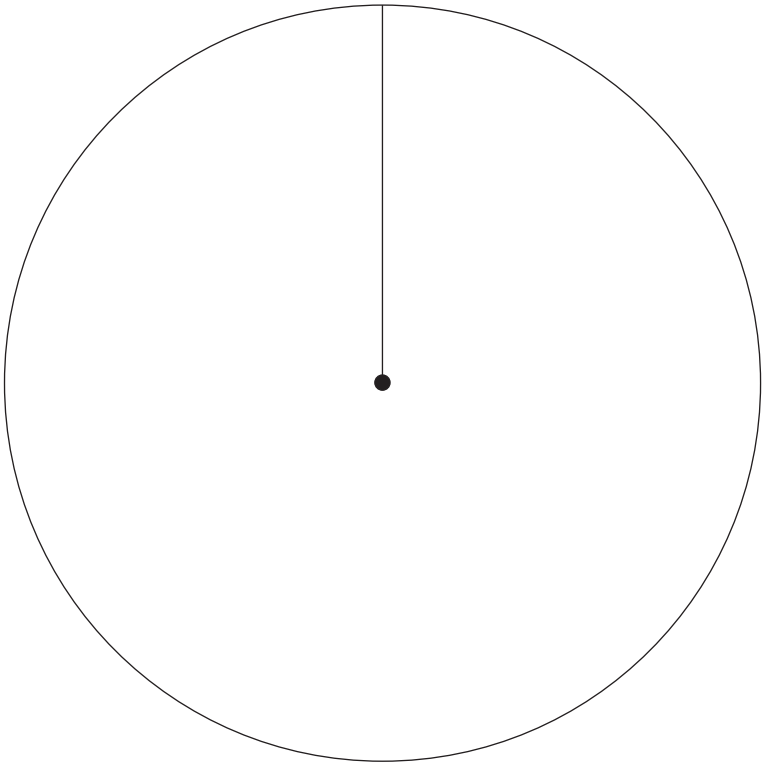
9 (a) 72 men were asked to choose their favourite type of film.
The table shows the results for the men.

Type of film	Frequency
Romance	12
Comedy	18
Thriller	27
Sci-fi	15

Draw and label a pie chart to show this information.

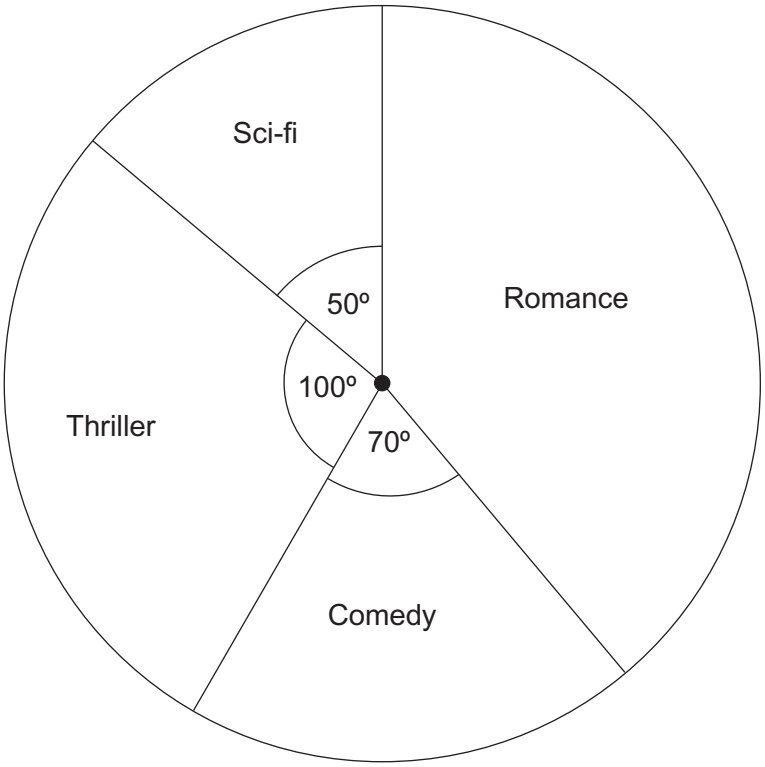
[4 marks]

Men



9 (b) 72 women were asked to choose their favourite type of film.
The pie chart shows the results for the women.

Women



How many more women than men chose romance?

[4 marks]

Answer _____

8

Turn over ▶

10 Jane is on holiday in France.
She buys a chocolate bar costing €4.60
At home she pays £3.50 for the same type of chocolate bar.

The exchange rate is £1 = €1.27

How much cheaper is the chocolate bar at home?
Give your answer in pence to the nearest penny.

[3 marks]

Answer _____p

11 A bus travels from Newcastle to Manchester.
The bus stops at some places on the route.

The driver keeps a record of how many people are on the bus when it **leaves** each place.

	Number of people on the bus
Leaving Newcastle	35
Leaving Durham	50
Leaving Harrogate	52
Leaving Leeds	
Arrive Manchester	

11 (a) At Durham, 3 people get off the bus.

How many people get on the bus at Durham?

[1 mark]

Answer _____

11 (b) At Leeds,

28 people get off the bus

6 people get on the bus.

How many people are on the bus when it leaves Leeds?

[2 marks]

Answer _____

6

12 Andy pays £3500 to buy a car that needs repairing.

He spends £750 repairing the car.

He sells the car for 65% more than the £3500 he paid.

Work out his profit.

[3 marks]

Answer £ _____

13 Five children are each asked 10 questions.

One mark is given for each correct answer.

Each child scores 7 or more marks.

Only one child scores 10 marks.

The mean of their five scores is one mark higher than the median of their five scores.

Work out the other four scores.

[2 marks]

Answer _____

14 A golf club has 580 members.

Here is some information about their age and gender.

75 of the members are men aged 25 to 39

250 members are aged 60 or over.

15% of the members are women aged 40 to 59

In the under 25 age group the ratio of men to women is 2 : 1

Some other information is shown in the two-way table.

	Under 25	**25 to 39**	**40 to 59**	**60 or over**	**Total**
Men					
Women		35			230
Total	33				580

Complete the table.

[5 marks]

10

15 Every morning Emma cycles the same distance.

One morning she stops for a rest when she has cycled exactly half the distance.
After a **further** 5 km she has cycled exactly $\frac{2}{3}$ of the total distance.

How many kilometres does Emma cycle each morning?
You **must** show your working.

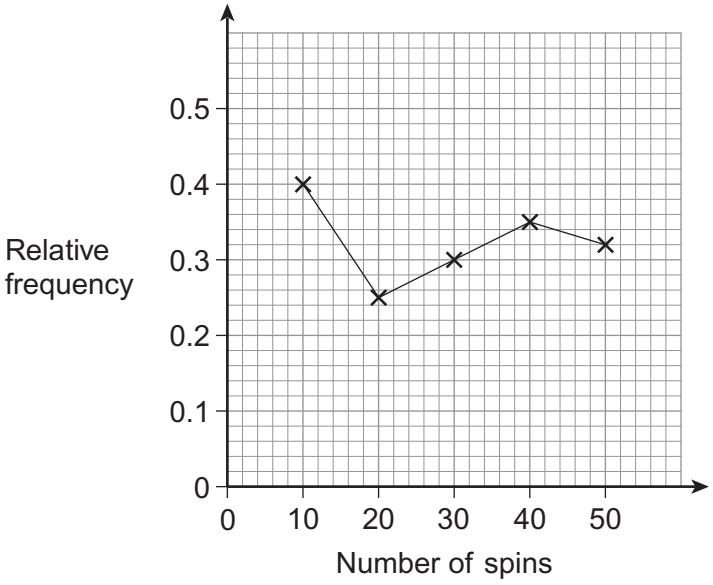
[3 marks]

Answer _____ km

16 A spinner has coloured sections.

Ellie spins the spinner 50 times.

After every 10 spins she records the total number of times the spinner has landed on blue.
The graph shows the relative frequency of blue after every set of 10 spins.



16 (a) How many times did the spinner land on blue in the first 30 spins?

[2 marks]

Answer _____

16 (b) Ellie continues to spin the spinner.
In total she spins it 200 times.

What is the best estimate for the number of times Ellie should expect the spinner to land on blue?
You **must** show your working

[2 marks]

Answer _____

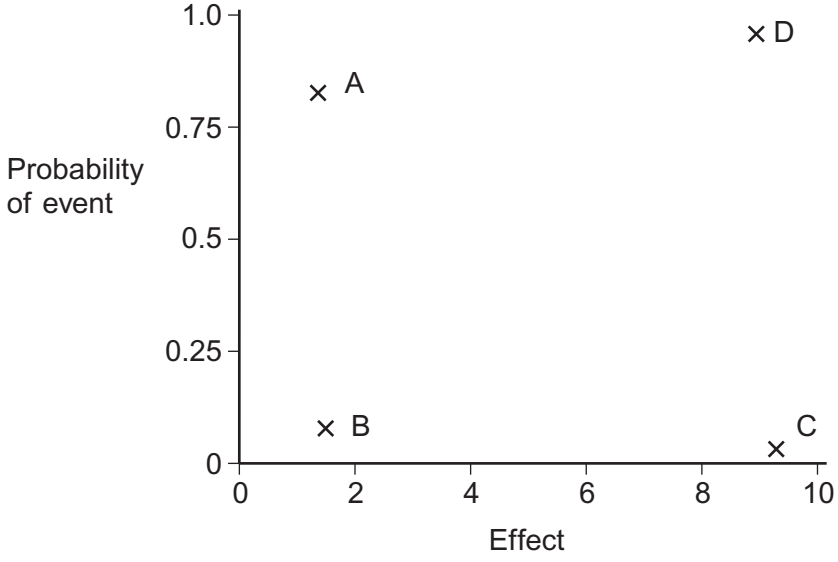
7

17 Here is a risk diagram.
The horizontal scale measures the effect of an event on a scale of 0 to 10

0 means no serious effect

10 means a very serious effect

The vertical scale shows the probability of an event happening.



Two events are described.

Event 1 A tree falls on someone.

Event 2 Someone has to queue to pay at a supermarket when the store is very busy.

17 (a) Which point on the diagram best matches **Event 1**?
Circle your answer.

[1 mark]

A B C D

17 (b) Which point on the diagram best matches **Event 2**?
Circle your answer.

[1 mark]

A B C D

18 Callum earns a salary of £19 650 per year, before any deductions.

His tax allowance is £10 110

He pays 20% tax on his taxable income.

Work out the amount of tax Callum pays per **month**.

[3 marks]

Answer £ _____

Turn over for the next question

5

***19 (a)** Sita is 158 cm tall.

Teri is 164 cm tall.

Helen is h cm tall.

Helen is taller than Sita but **not** taller than Teri.

Use **all** the information above to write down an inequality in h about Helen's height.

[2 marks]

Answer _____

***19 (b)** Sita is x years old.

Teri is 3 years older than Sita.

Helen is 2 years younger than Sita.

The total of their ages is 43 years.

Set up and solve an equation to work out their ages.

[5 marks]

Sita _____ years old

Teri _____ years old

Helen _____ years old

END OF QUESTIONS

7

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