Write your name here

Surname		Other names

Pearson
Edexcel GCSE

Centre Number

Candidate Number

Mathematics B
Unit 1: Statistics and Probability (Calculator)

Foundation Tier

Wednesday 2 November 2016 – Morning	Paper Reference
Time: 1 hour 15 minutes	**5MB1F/01**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 60
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

PEARSON

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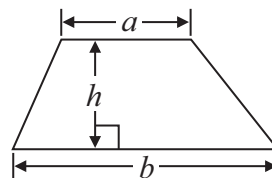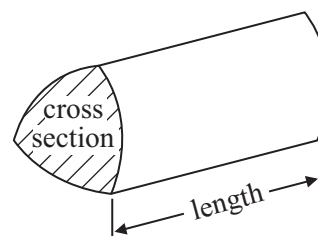
GCSE Mathematics 2MB01

Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

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

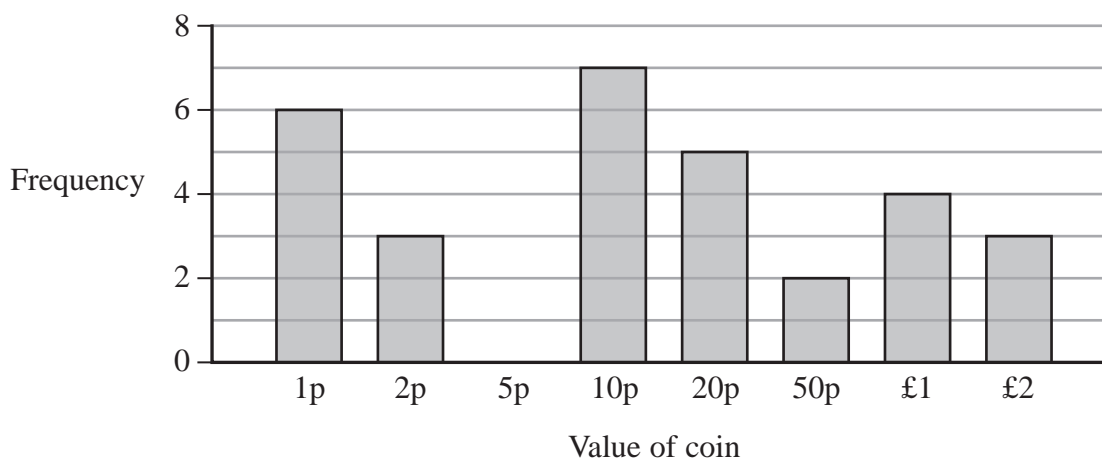**Volume of prism** = area of cross section × length

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 Yasah saves coins of different values in a box.
The bar chart gives information about the numbers of all the coins in the box.

(a) Which coin does Yasah have most of in the box?

....
(1)

Yasah had no coins of one value in the box.

(b) What value of coin is this?

....
(1)

(c) Work out the total number of coins in the box.

....
(1)

(Total for Question 1 is 3 marks)

2 The table shows information about seven microwaves.

Make	Power (watts)	Capacity (litres)	Cost (£)	Auto programmes
Ronald Higgs	800	20	74.99	8
Tornado	700	13	129.99	1
Shield	900	25	159.99	10
Style Master	900	28	199.99	4
Superstar	800	20	79.99	9
Kimble	900	30	109.99	10
Easy Cook	700	17	39.99	1

(a) Which microwave costs the most?

....

(1)

(b) Write down the power of the microwave that has a capacity of 13 litres.

....watts

(1)

(c) How many of these microwaves have more than 5 auto programmes and cost less than £120?
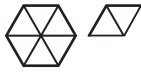
....

(1)

(Total for Question 2 is 3 marks)

3 Betty sells jars of honey.

The pictogram shows the numbers of jars of honey Betty sold on Tuesday, on Wednesday and on Thursday.

Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

Key:

⬡ represents 12 jars

(a) Work out the number of jars of honey Betty sold

(i) on Thursday,

....

(ii) on Wednesday.

....

(2)

Betty sold
24 jars of honey on Friday,
14 jars of honey on Saturday.

(b) Use this information to complete the pictogram.

(2)

(Total for Question 3 is 4 marks)

4 Here are 10 cards.
Each card has a letter on it.

| A | A | A | A | A |

| B | B | B | B | C |
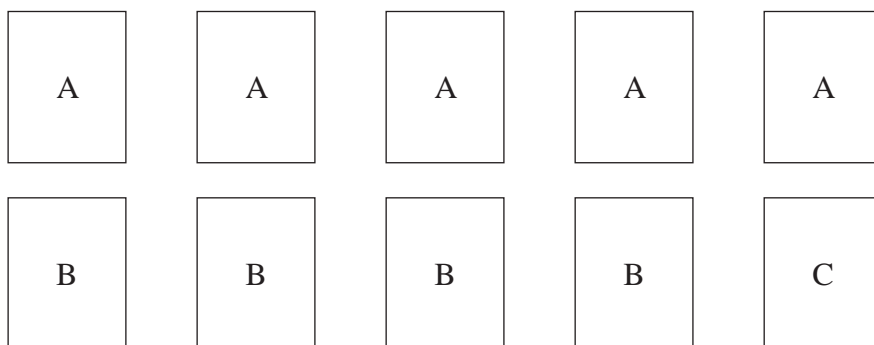
Jai is going to take at random one of the cards.

(a) Draw a circle around the word which best describes the likelihood that

(i) the card will have an A on it,

impossible   unlikely   evens   likely   certain

(ii) the card will have a C on it.

impossible   unlikely   evens   likely   certain

(2)

(b) On the probability scale, mark with a cross (×) the probability that the card will have a D on it.

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 ├──────────────────────┼──────────────────────┤
 0                       1                       1
                         ─
                         2
```

(1)
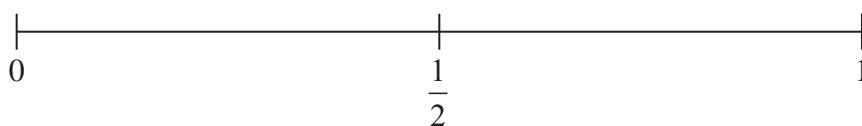
(Total for Question 4 is 3 marks)

5 Tom goes to a theme park.
There are 4 activities at the theme park.

The table gives information about these activities.

Activity	Start times			Time taken by activity (minutes)
Penguin feeding	10 45	12 15	13 45	35
Jeep safari	11 00	12 00	14 00	45
Steam train ride	10 15	11 40	14 00	25
Dolphin show	11 40	13 00	14 30	40

Tom wants to do all 4 activities.

He arrives at the theme park at 10 20
He needs to leave the theme park by 14 30

Plan a schedule for Tom's visit to the theme park so he can do all 4 activities.

Activity	Start time	Finish time
Penguin feeding	10 45	11 20
Jeep safari	12 00	12 45
Dolphin show	13 00	13 40
Steam train ride	14 00	14 25

(Total for Question 5 is 3 marks)
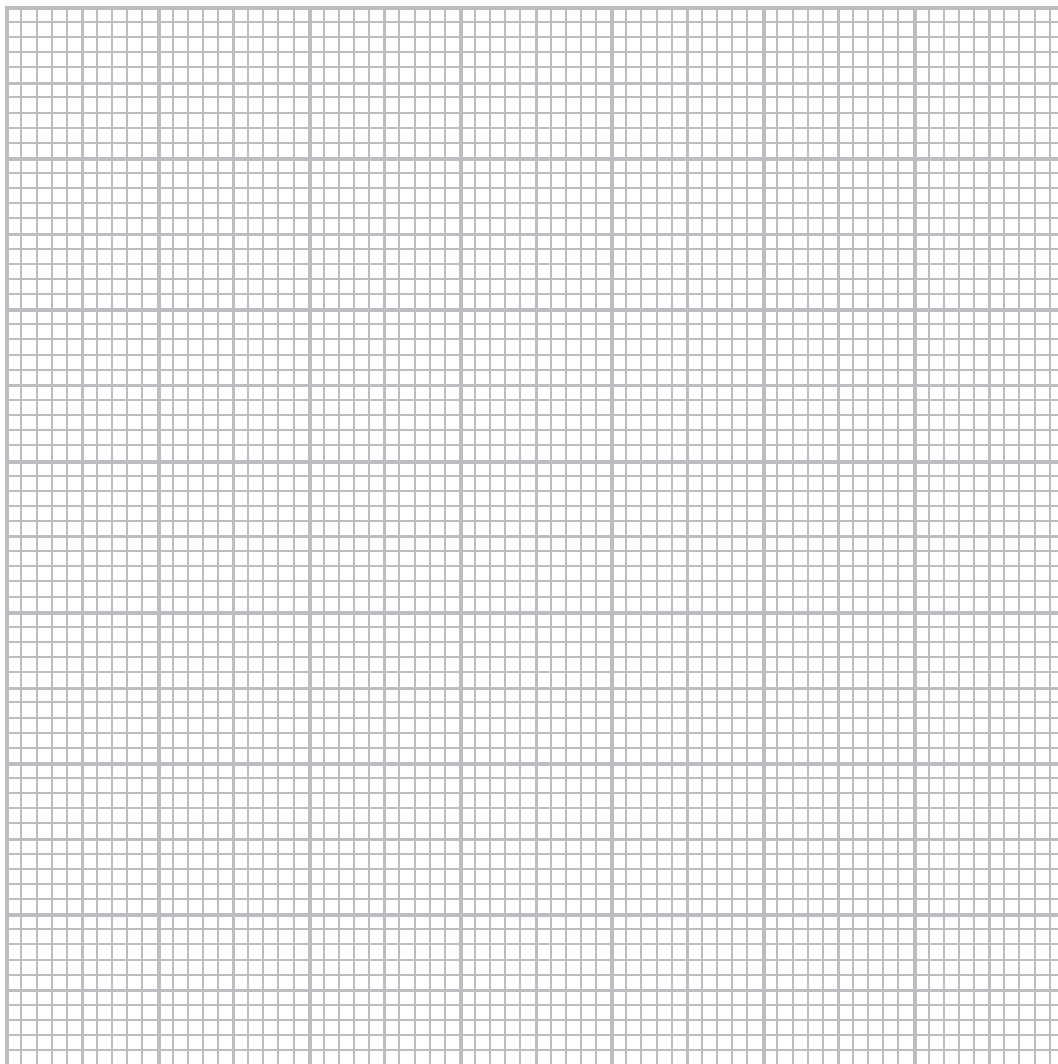
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*6 The table shows information about the number of times Trudy and Phil each played a computer game in each of four months this year.

	February	March	April	May
Trudy	25	50	35	15
Phil	10	40	35	20

On the grid, draw a suitable graph to show this information.

(Total for Question 6 is 4 marks)

7 Monique recorded the total number of eggs laid by each of 11 hens last week.
Here are her results.

5	4	5	3	1	7	2	5	2	3	5

(a) Find the mode.

....
(1)

(b) Find the median.

....
(2)

(c) Work out the range.

....
(2)

(Total for Question 7 is 5 marks)

8 Kerry has two fair 6-sided dice, A and B.

Kerry is going to roll both dice.

(a) Complete the sample space diagram to show all the possible outcomes.

Dice B

		1	**2**	**3**	**4**	**5**	**6**
	1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
	2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
Dice A	**3**	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
	4	(4, 1)	(4, 2)	(4, 3)	....	....	....
	5	(5, 1)	(5, 2)	(5, 3)	....	....	....
	6	(6, 1)	(6, 2)	(6, 3)	....	....	....

(1)

(b) Write down the probability that Kerry will get a 1 on dice A and a 1 on dice B.

....

(1)

Kerry rolls dice A and dice B.

*(c) Compare the probability that Kerry will get a total of 6 with the probability that she will get a total of 7

....

....

(1)

(Total for Question 8 is 3 marks)

9 Diana is going to have a party.
She wants to find out what people would like to drink at the party.

They can choose lemonade or cola or orange.

(a) Design a suitable table for a data collection sheet she could use.

(3)

Diana buys some bottles of orange and some bottles of lemonade.

A bottle of orange costs £1.75
A bottle of lemonade costs £1.20

Diana buys 2 bottles of orange and 3 bottles of lemonade.

She gets $\frac{1}{5}$ off the total cost.

Diana pays with a £10 note.

(b) How much change should Diana get?

£...

(4)

(Total for Question 9 is 7 marks)

10 There are 20 red counters and 15 blue counters in a bag.

(a) Write down the ratio of the number of red counters to the number of blue counters.
Give your ratio in its simplest form.

....

(2)

There are only red counters and blue counters in the bag.
x red counters are taken from the bag.
y blue counters are taken from the bag.

(b) Write down an expression, in terms of x and y, for the total number of counters now
in the bag.

....

(2)

(Total for Question 10 is 4 marks)

11 The two-way table shows some information about the numbers of ice creams sold in a shop.

	Friday	**Saturday**	**Sunday**	**Total**
Morning		34		
Afternoon	38		63	153
Total	65			265

Complete the two-way table.

(Total for Question 11 is 3 marks)

Turn over ▶

12 Tony is paid for the number of miles he drives.

The graph gives information about the amount Tony is paid for the number of miles he drives.
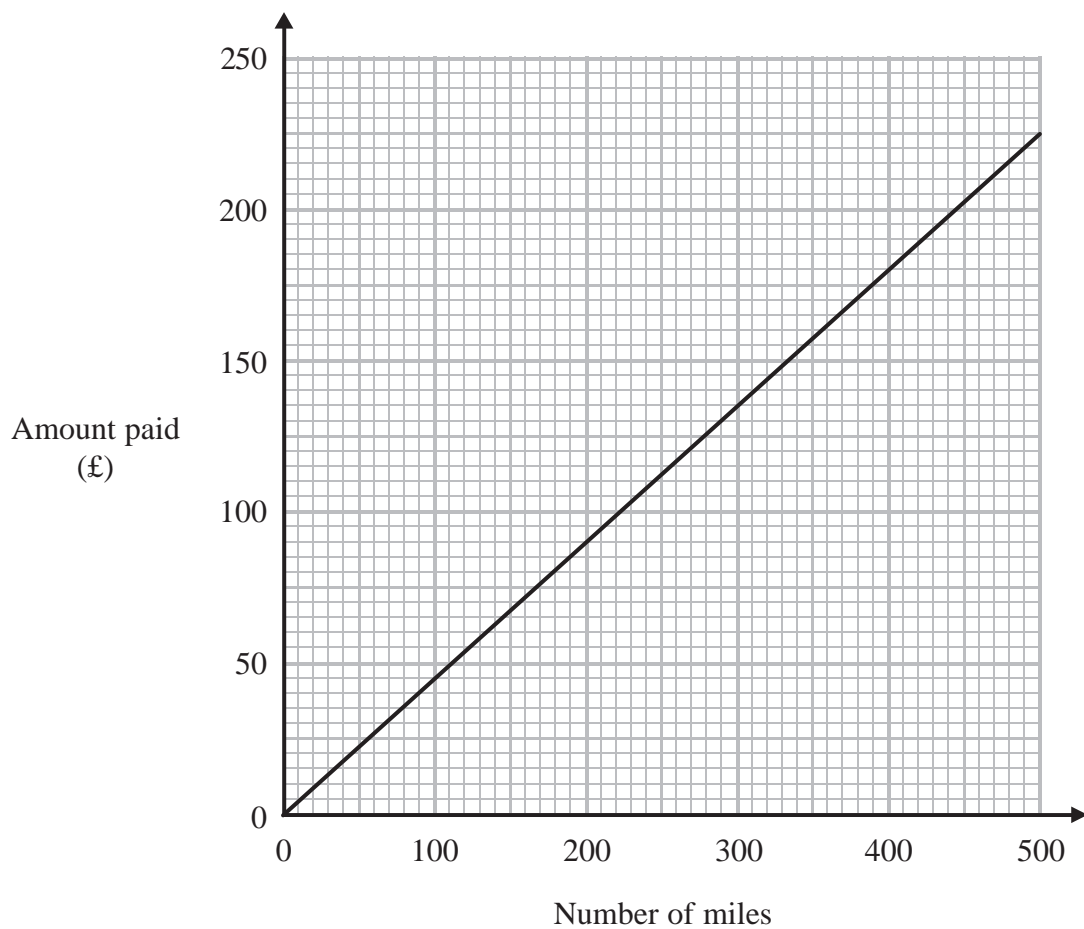
Tony drives 700 miles.

(a) Work out the amount Tony is paid.

£...

(b) Work out the amount Tony is paid for each mile he drives.

£...
(2)

(Total for Question 12 is 4 marks)

13 Jeremy catches 19 fish.

Here are the weights, in grams, of the fish.

50	61	57	47	53	75	62	48	64	73
78	51	66	58	66	48	55	69	50	

Draw an ordered stem and leaf diagram for these weights.
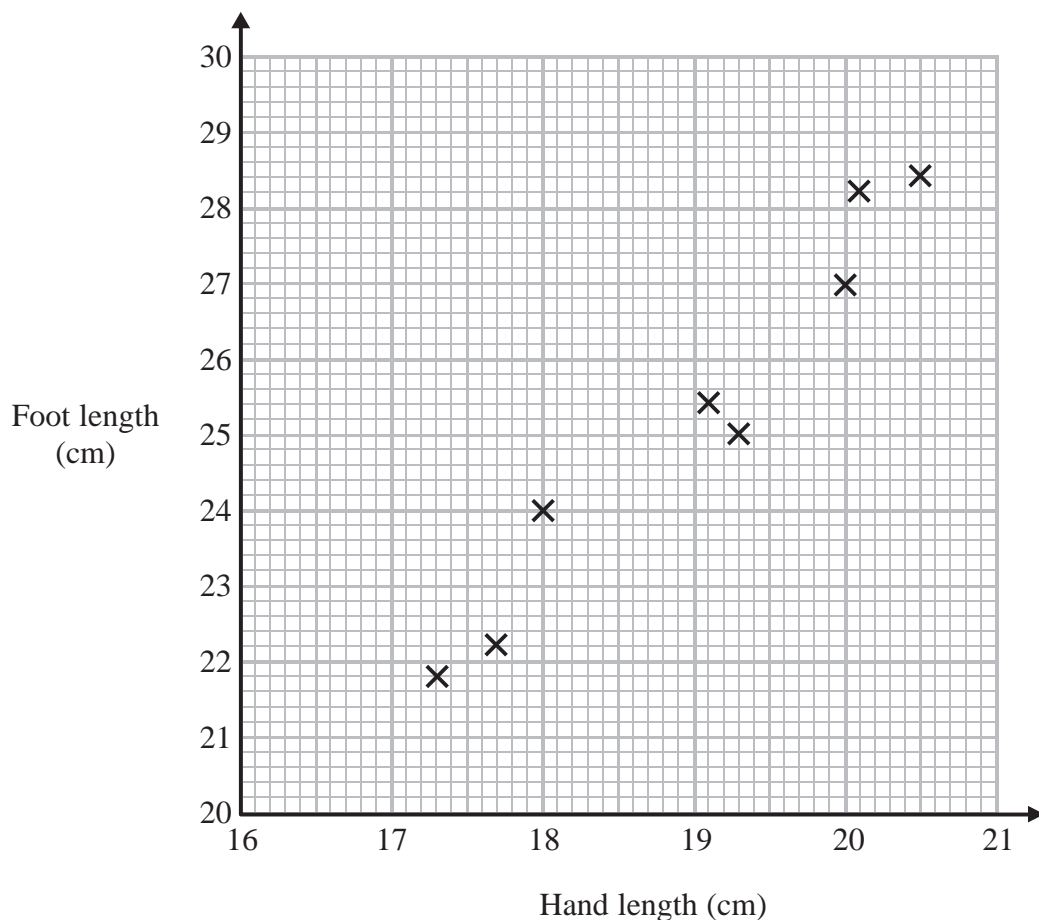
Key:

(Total for Question 13 is 3 marks)

14 The scatter graph gives information about the hand length and the foot length of each of 8 people.

(a) Describe the relationship between the hand length and the foot length of these people.

....

....
(1)

Toby has a hand length of 18.5 cm.

(b) Find an estimate for Toby's foot length.

....cm
(2)

(Total for Question 14 is 3 marks)

15 Khanna wants to find out how much time people spend listening to the radio.
She is going to use a questionnaire.

(a) Design a suitable question for Khanna to use on her questionnaire.

(2)

Khanna asks the people in her dance class to do the questionnaire.

(b) Her sample is biased.
Explain why.

....

....

(1)

(Total for Question 15 is 3 marks)

*16 Fraya is planning a chess competition.

Here are the costs.

Prizes	**Food and drink**	**Room**
First prize £50		£168
Second prize £25		15% discount on Saturdays.
Third prize £15	£225	

The competition will be on a Saturday.

There will be 48 players in the competition.
Each player will pay an entry fee of £9.50

Will Fraya get enough money from the entry fees to pay all the costs?
You must show your working.

(Total for Question 16 is 5 marks)

TOTAL FOR PAPER IS 60 MARKS

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