

Write your name here

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**Pearson**  
**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics B

## Unit 1: Statistics and Probability (Calculator)

**Foundation Tier**

Thursday 21 May 2015 – Morning  
**Time: 1 hour 15 minutes**

Paper Reference

**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  $\pi$  button, take the value of  $\pi$  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 ►

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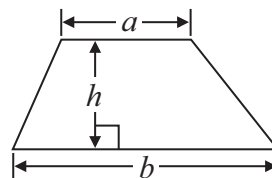
**PEARSON**

GCSE Mathematics 2MB01

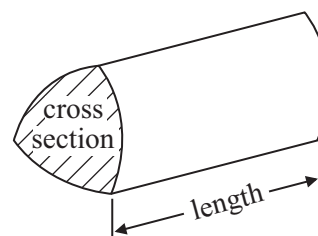
Formulae: Foundation Tier

**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  $\times$  length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 The table gives information about some hair dryers.

Make	Colour	Number of heat settings	Number of speeds	Cost (£)
Saplom	Black	1	2	15.00
Saplom	Black	2	2	19.99
Hilperon	Pink	3	2	21.25
Hilperon	Yellow	2	3	26.50
SGW	Black	2	2	31.49
SGW	Blue	3	2	35.20
SGW	Pink	3	3	42.00

(a) Write down the make of the cheapest hair dryer.

.....  
(1)

Magda wants to buy a hair dryer.  
The hairdryer must have 3 speeds.

She wants to pay less than £35

(b) What colour of hair dryer does she need to buy?

.....  
(1)

Zaheer buys a hair dryer.

The hair dryer has 3 heat settings.  
It is **not** pink.

(c) Write down the cost of this hair dryer.

£.....  
(1)

(Total for Question 1 is 3 marks)



2 Here is a list of the weeds in Hari's garden.

daisy	buttercup	clover	daisy	dandelion
clover	daisy	clover	daisy	dandelion
clover	daisy	daisy	clover	clover
dandelion	dandelion	clover	buttercup	clover

(a) Show this information in a frequency table.

(2)

Type of weed	Tally	Frequency
daisy		
buttercup		
clover		
dandelion		

(b) Draw a suitable chart or diagram to show this information.




(3)

(c) What type of weed is there most of?

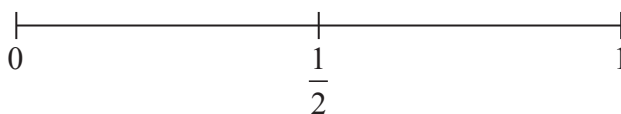
.....  
(1)

**(Total for Question 2 is 6 marks)**

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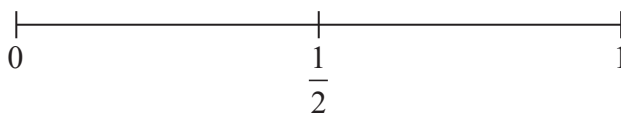


- 3 (a) On the probability scale, mark with a cross (×) the probability that the next baby born in England will be a boy.



(1)

- (b) On the probability scale, mark with a cross (×) the probability that when an ordinary dice is thrown it will land on the number 7



(1)

Here is a list of words.

impossible      unlikely      evens      likely      certain

Chen throws 3 fair coins.

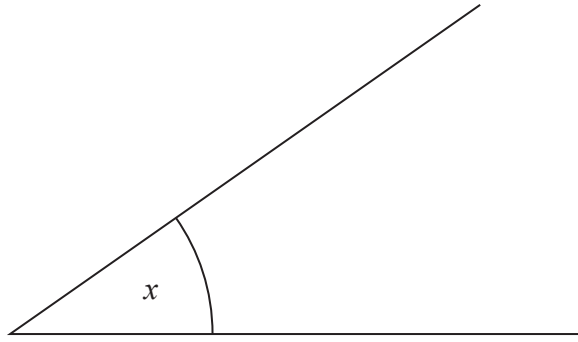
- (c) Choose one word from the list that best describes the likelihood that Chen will get heads with all 3 coins.

.....  
(1)

**(Total for Question 3 is 3 marks)**



4



(a) Measure the size of the angle marked  $x$ .

.....  
(1)

(b)



On the line, mark with a cross ( $\times$ ) the point 6.4 cm from the point  $P$ .

(1)

**(Total for Question 4 is 2 marks)**



\*5 Leandros goes swimming to keep fit.

Here is his swimming plan for the next four weeks

- Each Monday, each Wednesday and each Friday swim 30 lengths of the swimming pool.
- Each Saturday swim 60 lengths of the swimming pool.

The length of the swimming pool is 25 metres.

Leandros will start his swimming plan on Monday.  
He wants to swim at least 14 km in four weeks.

Leandros follows his swimming plan.

Does he swim at least 14 km in the four weeks?  
You must show all of your working.


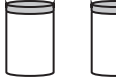

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**(Total for Question 5 is 4 marks)**






6 The pictogram gives information about the number of jars of honey sold in a farm shop in each of three weeks.

week 1	
week 2	
week 3	
week 4	

**Key:**



represents 10 jars

(a) Write down the number of jars of honey sold in week 1

.....  
(1)

(b) Write down the number of jars of honey sold in week 2

.....  
(1)

40 jars of honey were sold in week 4

(c) Show this on the pictogram.

(1)

More jars of honey were sold in week 4 than in week 3

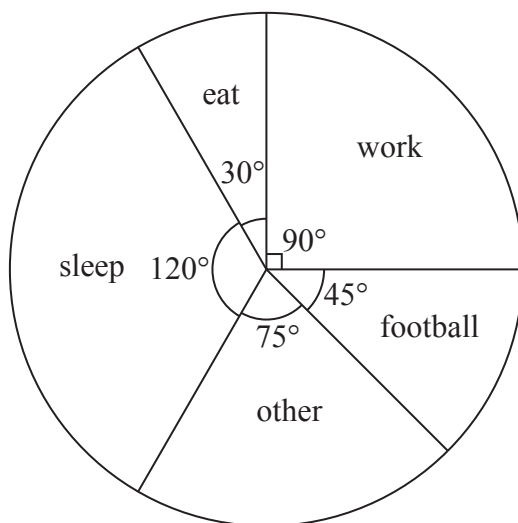
(d) Work out how many more.

.....  
(1)

**(Total for Question 6 is 4 marks)**



7 The pie chart gives information about what Ryan did in 24 hours one Saturday.



(a) What did Ryan do most?

.....  
(1)

(b) Write down the fraction of the pie chart that shows when Ryan was working.

.....  
(1)

(c) How many hours did Ryan do football?

..... hours  
(2)

**(Total for Question 7 is 4 marks)**



- 8 Mrs Smith asked each student in her class to record the numbers of times they used their mobile phone last Saturday.

Here are the results for the boys.

Boys            8      10      8      9      7      9      8      13      14

- (a) Work out the median.

.....  
(2)

Here are the results for the girls.

Girls            6      8      9      9      10      14      14

- \*(b) Compare the numbers of times the boys used their mobile phones with the numbers of times the girls used their mobile phones.

(4)

(Total for Question 8 is 6 marks)



9 Some students went on an activity course.

Each student had to choose one activity from art or drama or music.

There were 41 students.

15 of the students chose music.

30 of the students were girls.

8 of the girls chose art.

No boys chose art.

Equal numbers of boys and girls chose drama.

Complete the two-way table.

	art	drama	music	total
girls				
boys				
total				41

(Total for Question 9 is 3 marks)



**10** There are 9 white beads and 11 red beads in a bag.  
There are no other beads in the bag.

Jim takes at random a bead from the bag.

(a) Write down the probability that the bead will be white.

.....  
(2)

There are 9 green beads and 11 blue beads in a box.  
Jim adds 10 more beads to this box.

Jim is going to take at random a bead from the 30 beads in the box.

The probability that he will take a green bead is  $\frac{2}{5}$

(b) Work out how many green beads Jim adds to the box.

.....  
(3)

**(Total for Question 10 is 5 marks)**

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**11** Kevin wants to get the ferry to Ireland.  
He is going to drive from home to the ferry.

He has to get to the ferry at least three quarters of an hour before the ferry leaves.  
The ferry leaves at 1 30 pm.

It will take Kevin 1 hour 50 minutes to drive to the ferry.

(a) What is the latest time he can leave home?

.....  
(2)

A ferry crossing costs

£125 on Saturdays  
£109 on Mondays

Kevin has a voucher for 15% off the cost of a ferry crossing on Mondays.

Kevin can go on Saturday without using the voucher or on Monday using the voucher.

(b) What is the difference in the cost of the ferry crossing if Kevin goes on Monday rather than on Saturday?

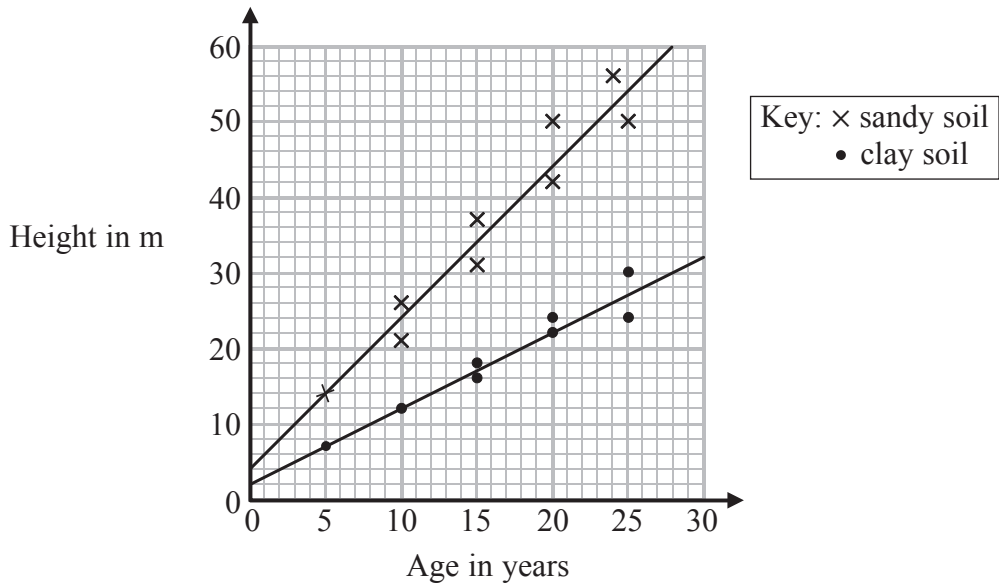
£.....  
(3)

**(Total for Question 11 is 5 marks)**



12 Bill wants to compare the heights of pine trees growing in sandy soil with the heights of pine trees growing in clay soil.

The scatter diagram gives some information about the heights and the ages of some pine trees.



(a) Describe the relationship between the height of pine trees and the age of pine trees growing in sandy soil.

(1)

A pine tree growing in clay soil is 18 years old.

(b) Find an estimate for the height of this tree.

.....m

(1)

A pine tree is growing in sandy soil.

(c) Work out an estimate for how much the height of this tree increases in a year.

.....m

(2)

(Total for Question 12 is 4 marks)



**13** Uzma has a biased coin.

When she throws the coin once, the probability of getting heads is  $x$ .

(a) Write down an expression, in terms of  $x$ , for the probability of getting tails.

.....  
(1)

Uzma throws the coin 200 times.

(b) Write down an expression, in terms of  $x$ , for an estimate for the number of times she gets tails.

.....  
(2)

**(Total for Question 13 is 3 marks)**

---





**14** Ewen has 48 white tiles and 16 blue tiles.

- (a) Write down the ratio of the number of white tiles to the number of blue tiles.  
Give your ratio in its simplest form.

.....  
(2)

The cost of each white tile was £2  
The cost of each blue tile was £4

- (b) Work out the ratio of the total cost of the white tiles to the total cost  
of the blue tiles.

.....  
(2)

**(Total for Question 14 is 4 marks)**

---



15 Julian wants to find out whether people in his town like to buy food from the market.  
He wants to carry out a survey.  
He is going to ask people as they leave the market.

This is not a good way of collecting information.

(a) Give a reason why.

(1)

Julian also wants to know what people think about the price of food from the market.  
He uses this question on a questionnaire.

Food from the market is very cheap. Do you agree?

Yes

No

Do not know

(b) Write down **one** thing wrong with this question.

(1)



Julian also wants to know how far people travel to buy food from the market.

(c) Design a suitable question for Julian to use on his questionnaire.

(2)

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**(Total for Question 15 is 4 marks)**

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**TOTAL FOR PAPER IS 60 MARKS**



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