OCR
Oxford Cambridge and RSA

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AS Level Further Mathematics B (MEI)
Y416 Statistics b
Sample Question Paper

Date – Morning/Afternoon
Time allowed: 1 hour 15 minutes

OCR supplied materials:
- Printed Answer Booklet
- Formulae Further Mathematics B (MEI)

You must have:
- Printed Answer Booklet
- Formulae Further Mathematics B (MEI)
- Scientific or graphical calculator

INSTRUCTIONS
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Complete the boxes provided on the Printed Answer Booklet with your name, centre number and candidate number.
- Answer **all** the questions.
- **Write your answer to each question in the space provided in the Printed Answer Booklet.**
- Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.
- You are permitted to use a scientific or graphical calculator in this paper.
- Final answers should be given to a degree of accuracy appropriate to the context.

INFORMATION
- The total number of marks for this paper is **60**.
- The marks for each question are shown in brackets **[ ]**.
- You are advised that an answer may receive **no marks** unless you show sufficient detail of the working to indicate that a correct method is used. You should communicate your method with correct reasoning.
- The Printed Answer Booklet consists of **12** pages. The Question Paper consists of **8** pages.

Answer **all** the questions.

1 Abby runs a stall at a charity event. Visitors to the stall pay to play a game in which six fair dice are rolled. If the difference between the highest and lowest scores is less than 3 then the player wins £5. Otherwise the player wins nothing.

Abby designs the spreadsheet shown in Fig. 1 to estimate the probability of a player winning, by simulating 20 goes at the game. Cell C5, highlighted, shows that the 2nd dice in simulated game 4 scores 5. Cells H5 and I5 show the highest and lowest scores, respectively, in game 4, and cell J5 gives the difference between them.

C5 =RANDBETWEEN(1,6)

	A	B	C	D	E	F	G	H	I	J
1		dice 1	dice 2	dice 3	dice 4	dice 5	dice 6	High score	Low score	Difference
2	game 1	2	2	4	2	3	3	4	2	2
3	game 2	2	6	3	2	1	2	6	1	5
4	game 3	3	1	5	3	4	6	6	1	5
5	game 4	6	5	2	5	6	3	6	2	4
6	game 5	6	3	3	5	3	2	6	2	4
7	game 6	5	6	3	5	1	4	6	1	5
8	game 7	2	3	1	2	6	4	6	1	5
9	game 8	6	6	6	6	1	5	6	1	5
10	game 9	3	6	2	5	4	1	6	1	5
11	game 10	5	1	1	4	6	1	6	1	5
12	game 11	2	5	6	1	6	5	6	1	5
13	game 12	2	5	6	6	6	6	6	2	4
14	game 13	2	2	2	2	4	4	4	2	2
15	game 14	1	6	6	6	3	5	6	1	5
16	game 15	2	2	3	3	5	1	5	1	4
17	game 16	1	2	3	4	3	3	4	1	3
18	game 17	5	2	4	2	1	6	6	1	5
19	game 18	6	1	5	2	1	5	6	1	5
20	game 19	1	3	5	1	3	5	5	1	4
21	game 20	5	4	3	2	5	1			

Fig. 1

(i) (*A*) Write down the numbers in columns H, I and J for game 20. **[1]**

(*B*) Use the spreadsheet to estimate the probability of a player winning a game. **[2]**

(ii) State how the estimate of probability in **(i)** (*B*) could be improved. **[1]**

(iii) Give one advantage and one disadvantage of using this simulation technique compared with working out the theoretical probability. **[2]**

All profit made by the stall is given to charity. Abby has to decide how much to charge players to play.

(iv) If Abby charges £1 per game, estimate the total profit when 50 players each play the game once. **[3]**

2 The cumulative distribution function of the continuous random variable, *Y*, is given below.

$$\mathrm{F}(y) = \begin{cases} 0 & y < 0 \\ \dfrac{y^3 - y^2}{4} & 1 \le y \le 2 \\ 1 & y > 2 \end{cases}$$

(i) Find $\mathrm{P}(Y \le 1.5)$ **[2]**

(ii) Verify that the median of *Y* lies between 1.6 and 1.7. **[3]**

(iii) Find the probability density function of *Y*. **[2]**

3 At a factory, flour is packed into bags. A model for the mass in grams of flour packed into each bag is $1500 + X$, where *X* is a continuous random variable with probability density function

$$\mathrm{f}(x) = \begin{cases} kx(6 - x) & 0 \le x \le 6 \\ 0 & \text{elsewhere,} \end{cases}$$

where *k* is a constant.

(i) Show that $k = \dfrac{1}{36}$. **[2]**

(ii) Find the probability that a randomly selected bag of flour contains 1505 grams of flour or more. **[3]**

(iii) Find

- the mean of *X*,
- the standard deviation of *X*. **[6]**

4 An online encyclopedia claims that the average mass of an adult European hedgehog is 720 g. In an investigation to check this average figure, the masses in grams of twelve randomly chosen adult European hedgehogs are measured and shown below.

705	730	720	691	718	680
731	723	745	708	724	736

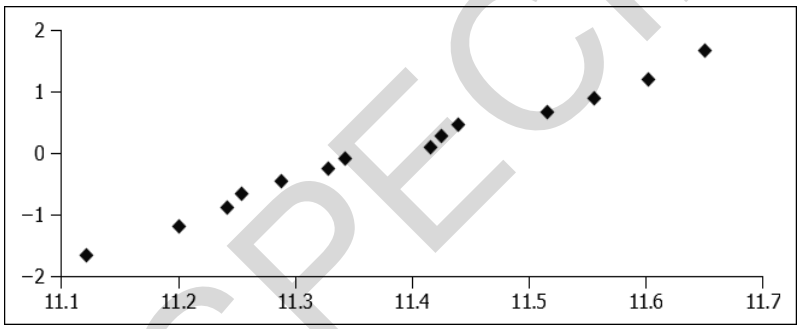
(i) What assumption is required to carry out a Wilcoxon test in this situation? **[1]**

(ii) Given that this assumption is met, carry out a 2-tail Wilcoxon test at the 5% level to test whether the median mass is 720 g. You should state your hypotheses and complete the table of calculations in the Printed Answer Booklet. **[7]**

5 A particular alloy of bronze is specified as containing 11.5% copper on average. A researcher takes a random sample of 14 specimens of this bronze and undertakes an analysis of each of them. The percentages of copper are found to be as follows.

11.12	11.29	11.42	11.43	11.20	11.25	11.65
11.33	11.56	11.34	11.44	11.24	11.60	11.52

The researcher uses software to draw a Normal probability plot for these data and to conduct a Kolmogorov-Smirnov test for Normality. The output is shown in Fig 5.1.



Kolmogorov-Smirnov Test for Normality

p-value > 0.15

Fig 5.1

(i) Comment on what the Normal probability plot and the *p*-value of the test suggest about the data. **[3]**

The researcher uses software to produce a 99% confidence interval for the mean percentage of copper in the alloy, based on the *t* distribution. The output from the software is shown in Fig 5.2.

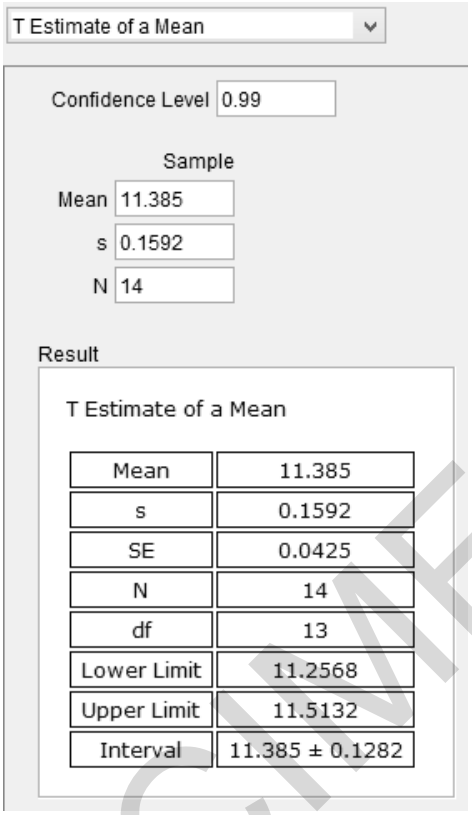


Fig 5.2

(ii) State the confidence interval which the software gives, in the form $a < \mu < b$. **[1]**

(iii) (*A*) State an assumption necessary for the use of the *t* distribution in the construction of this confidence interval. **[1]**

(*B*) State whether the assumption in part **(iii)** (*A*) seems reasonable. **[1]**

(iv) Does the confidence interval suggest that the copper content is different from 11.5%, on average? Explain your answer. **[2]**

(v) In the output from the software shown in Fig 5.2, SE stands for 'standard error'.

(*A*) Explain what a standard error is. **[1]**

(*B*) Show how the standard error was calculated in this case. **[1]**

(vi) Suggest a way in which the researcher could produce a narrower confidence interval. **[1]**

6 The table below shows the mean and variance of the test scores of a random samples of 70 girls who are starting an A level Mathematics course.

Sample mean	Sample variance
118.86	86.57

(i) Showing your working, find a 95% confidence interval for the population mean. **[4]**

(ii) Explain why you can construct the interval in part **(i)** despite no information about the distribution of the parent population being given. **[2]**

(iii) The same random sample of girls repeats the test. The mean improvement in score is 0.9. The 95% confidence interval for the improvement is [-1.5, 3.3]. What is the sample variance for the improvement in score? **[2]**

7 Two flatmates work at the same location. One of them takes the bus to work and the other one cycles. Journey times, measured in minutes, are distributed as follows.

- By bus: Normally distributed with mean 23 and standard deviation 6
- By bicycle: Normally distributed with mean 21 and standard deviation 2

You should assume that all journey times are independent.

(i) One morning the two flatmates set out at the same time. Find the probability that the person who takes the bus arrives before the cyclist. **[3]**

(ii) Find the probability that the total time taken for 5 bus journeys is less than 2 hours. **[2]**

(iii) Comment on the assumption that all journey times are independent. **[1]**

END OF QUESTION PAPER

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OCR
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…day June 20XX – Morning/Afternoon

AS Level Further Mathematics B (MEI)

Y416 Statistics b

SAMPLE MARK SCHEME

Duration: 1 hour 15 minutes

MAXIMUM MARK 60

This document consists of 12 pages

Text Instructions

1. **Annotations and abbreviations**

Annotation in scoris	Meaning
✓and ✗	
BOD	Benefit of doubt
FT	Follow through
ISW	Ignore subsequent working
M0, M1	Method mark awarded 0, 1
A0, A1	Accuracy mark awarded 0, 1
B0, B1	Independent mark awarded 0, 1
SC	Special case
^	Omission sign
MR	Misread
Highlighting	
Other abbreviations in mark scheme	**Meaning**
E1	Mark for explaining a result or establishing a given result
U1	Mark for correct units
G1	Mark for a correct feature on a graph
dep*	Mark dependent on a previous mark, indicated by *
cao	Correct answer only
oe	Or equivalent
rot	Rounded or truncated
soi	Seen or implied
www	Without wrong working
AG	Answer given
awrt	Anything which rounds to
BC	By Calculator
DR	This indicates that the instruction **In this question you must show detailed reasoning** appears in the question.

2. Subject-specific Marking Instructions for AS Level Further Mathematics B (MEI)

a Annotations should be used whenever appropriate during your marking. The A, M and B annotations must be used on your standardisation scripts for responses that are not awarded either 0 or full marks. It is vital that you annotate standardisation scripts fully to show how the marks have been awarded. For subsequent marking you must make it clear how you have arrived at the mark you have awarded.

b An element of professional judgement is required in the marking of any written paper. Remember that the mark scheme is designed to assist in marking incorrect solutions. Correct solutions leading to correct answers are awarded full marks but work must not be judged on the answer alone, and answers that are given in the question, especially, must be validly obtained; key steps in the working must always be looked at and anything unfamiliar must be investigated thoroughly. Correct but unfamiliar or unexpected methods are often signalled by a correct result following an apparently incorrect method. Such work must be carefully assessed. When a candidate adopts a method which does not correspond to the mark scheme, escalate the question to your Team Leader who will decide on a course of action with the Principal Examiner.
If you are in any doubt whatsoever you should contact your Team Leader.

c The following types of marks are available.

M
A suitable method has been selected and *applied* in a manner which shows that the method is essentially understood. Method marks are not usually lost for numerical errors, algebraic slips or errors in units. However, it is not usually sufficient for a candidate just to indicate an intention of using some method or just to quote a formula; the formula or idea must be applied to the specific problem in hand, e.g. by substituting the relevant quantities into the formula. In some cases the nature of the errors allowed for the award of an M mark may be specified.

A
Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. Accuracy marks cannot be given unless the associated Method mark is earned (or implied). Therefore M0 A1 cannot ever be awarded.

B
Mark for a correct result or statement independent of Method marks.

E
A given result is to be established or a result has to be explained. This usually requires more working or explanation than the establishment of an unknown result.

Unless otherwise indicated, marks once gained cannot subsequently be lost, e.g. wrong working following a correct form of answer is ignored. Sometimes this is reinforced in the mark scheme by the abbreviation isw. However, this would not apply to a case where a candidate passes through the correct answer as part of a wrong argument.

d When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. (The notation 'dep*' is used to indicate that a particular mark is dependent on an earlier, asterisked, mark in the scheme.) Of course, in practice it may happen that when a candidate has once gone wrong in a part of a question, the work from there on is worthless so that no more marks can sensibly be given. On the other hand, when two or more steps are successfully run together by the candidate, the earlier marks are implied and full credit must be given.

e The abbreviation FT implies that the A or B mark indicated is allowed for work correctly following on from previously incorrect results. Otherwise, A and B marks are given for correct work only – differences in notation are of course permitted. A (accuracy) marks are not given for answers obtained from incorrect working. When A or B marks are awarded for work at an intermediate stage of a solution, there may be various alternatives that are equally acceptable. In such cases, what is acceptable will be detailed in the mark scheme. If this is not the case please, escalate the question to your Team Leader who will decide on a course of action with the Principal Examiner.
Sometimes the answer to one part of a question is used in a later part of the same question. In this case, A marks will often be 'follow through'. In such cases you must ensure that you refer back to the answer of the previous part question even if this is not shown within the image zone. You may find it easier to mark follow through questions candidate-by-candidate rather than question-by-question.

f Unless units are specifically requested, there is no penalty for wrong or missing units as long as the answer is numerically correct and expressed either in SI or in the units of the question. (e.g. lengths will be assumed to be in metres unless in a particular question all the lengths are in km, when this would be assumed to be the unspecified unit.) We are usually quite flexible about the accuracy to which the final answer is expressed; over-specification is usually only penalised where the scheme explicitly says so. When a value is given in the paper only accept an answer correct to at least as many significant figures as the given value. This rule should be applied to each case. When a value is not given in the paper accept any answer that agrees with the correct value to 2 s.f. Follow through should be used so that only one mark is lost for each distinct accuracy error, except for errors due to premature approximation which should be penalised only once in the examination. There is no penalty for using a wrong value for *g*. E marks will be lost except when results agree to the accuracy required in the question.

g Rules for replaced work: if a candidate attempts a question more than once, and indicates which attempt he/she wishes to be marked, then examiners should do as the candidate requests; if there are two or more attempts at a question which have not been crossed out, examiners should mark what appears to be the last (complete) attempt and ignore the others. NB Follow these maths-specific instructions rather than those in the assessor handbook.

h For a genuine misreading (of numbers or symbols) which is such that the object and the difficulty of the question remain unaltered, mark according to the scheme but following through from the candidate's data. A penalty is then applied; 1 mark is generally appropriate, though this may differ for some papers. This is achieved by withholding one A mark in the question. Marks designated as cao may be awarded as long as there are no other errors. E marks are lost unless, by chance, the given results are established by equivalent working. 'Fresh starts' will not affect an earlier decision about a misread. Note that a miscopy of the candidate's own working is not a misread but an accuracy error.

i If a graphical calculator is used, some answers may be obtained with little or no working visible. Allow full marks for correct answers (provided, of course, that there is nothing in the wording of the question specifying that analytical methods are required). Where an answer is wrong but there is some evidence of method, allow appropriate method marks. Wrong answers with no supporting method score zero. If in doubt, consult your Team Leader.

j If in any case the scheme operates with considerable unfairness consult your Team Leader.

k Anything in the mark scheme which is in square brackets […] is not required for the mark to be earned on this occasion, but shows what a complete solution might look like

Question			Answer	Marks	AOs	Guidance	
1	(i)	(*A*)	5, 1, 4	B1 [1]	1.1		
1	(i)	(*B*)	Estimate of P(Less than 3) = $\frac{2}{20}$ =0.1	M1 A1 [2]	3.4 1.1		
1	(ii)		Simulate more goes at the game	E1 [1]	3.5c		
1	(iii)		Advantage is that the probabilities are difficult to calculate Disadvantage is that it does not give an exact answer	E1 E1 [2]	1.1 3.5b		
1	(iv)		Expected profit = 50 × £1 – 50 × 0.1 × £5 =£25	M1 M1 A1 [3]	3.4 1.1a 1.1	For 50 × £1 for 50 × 0.1 × £5	

Question			Answer	Marks	AOs	Guidance	
2	(i)		$\frac{1.5^3 - 1.5^2}{4}$ $\frac{9}{32} = 0.28125$	M1 A1 [2]	1.1a 1.1		
2	(ii)		F(1.6) = 0.384 F(1.7) = 0.50575 At the median, m, F(m) = 0.5 so the median must be between 1.6 and 1.7	M1 M1 A1 [3]	1.1a 1.1 2.2b		
2	(iii)		$f(y) = \frac{3y^2 - 2y}{4}$, $1 \le y \le 2$	M1 A1 [2]	1.1a 1.1		

Question			Answer	Marks	AOs	Guidance	
3	(i)		$k\int_0^6 x(6-x)\mathrm{d}x = 1$	M1	2.1	Must be seen	
			$k \times 36 = 1$	A1	1.1	BC	
			$k = \frac{1}{36}$ AG				
			Alternative Method				
			$k\left[3x^2 - \frac{1}{3}x^3\right]_0^6 = 1$	M1			
			$k(108-72) = 1$	A1			
			$k = \frac{1}{36}$ AG				
				[2]			
3	(ii)		$\mathrm{P}(\text{Weight} \geq 1505) = \mathrm{P}(X \geq 5)$	B1	3.4	soi	
			$= \frac{1}{36}\int_5^6 x(6-x)\mathrm{d}x$	M1	1.1a	$\frac{1}{36}\left[3x^2 - \frac{1}{3}x^3\right]_5^6$ may be seen	
			$= 0.0741$	A1	1.1	BC	
				[3]			

Question			Answer	Marks	AOs	Guidance	
3	(iii)		**Either**				
			Mean = $\mathrm{E}(X) = \int_0^6 x^2(6-x)\mathrm{d}x$	**M1**	**1.1**	$\left[2x^3 - \frac{1}{4}x^4\right]_0^6$ may be seen	
			= 3	**A1**	**1.1**	BC Must be exact	
			OR				
			Convincing argument about symmetry of distribution	**M1**		Sketch without comment insufficient.	
			Mean = 3	**A1**			
			$\mathrm{E}(X^2) = \int_0^6 x^3(6-x)\mathrm{d}x$	**M1**	**1.1**	$\left[\frac{3}{2}x^4 - \frac{1}{5}x^5\right]_0^6$ may be seen	
			=10.8	**A1**	**1.1**	BC	
			$\mathrm{Var}(X) = 10.8 - 3^2 = 1.8$	**M1**	**1.1**		
			Standard deviation = 1.34…	**A1**	**1.1**		
				[6]			

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>AOs</th><th colspan="2">Guidance</th></tr>
<tr><td>4</td><td>(i)</td><td></td><td>Underlying distribution is symmetrical</td><td>E1
[1]</td><td>1.2</td><td></td><td></td></tr>
<tr><td>4</td><td>(ii)</td><td></td><td>H_0: population median is 720g

H_1: population median is not 720g
<table>
<tr><th>Mass</th><th>Mass –720</th><th></th><th></th></tr>
<tr><td>705</td><td>–15</td><td>15</td><td>7</td></tr>
<tr><td>730</td><td>10</td><td>10</td><td>4</td></tr>
<tr><td>720</td><td>0</td><td>0</td><td></td></tr>
<tr><td>691</td><td>–29</td><td>29</td><td>10</td></tr>
<tr><td>718</td><td>–2</td><td>2</td><td>1</td></tr>
<tr><td>680</td><td>–40</td><td>40</td><td>11</td></tr>
<tr><td>731</td><td>11</td><td>11</td><td>5</td></tr>
<tr><td>723</td><td>3</td><td>3</td><td>2</td></tr>
<tr><td>745</td><td>25</td><td>25</td><td>9</td></tr>
<tr><td>708</td><td>–12</td><td>12</td><td>6</td></tr>
<tr><td>724</td><td>4</td><td>4</td><td>3</td></tr>
<tr><td>736</td><td>16</td><td>16</td><td>8</td></tr>
</table>
$W_+ = 4+5+2+9+3+8 = 31$
$W_- = 7+10+1+11+6 = 35$
Test statistic = 31
Critical value = 10
No evidence to reject null hypothesis that the median mass of hedgehogs is 720 g.</td><td>B1

B1

M1

M1

A1
B1
A1

[7]</td><td>3.3

2.5

1.1

1.1

1.1
3.4
3.5a</td><td>Population median used in hypotheses
Both hypotheses correct
Ranks
Attempt to calculate both W_+ W_-
Test statistic
Critical value
Conclusion in context</td><td></td></tr>
</table>

Question			Answer	Marks	AOs	Guidance	
5	(i)		Normal probability plot is roughly a straight line high *p*-value suggests that the data may be from a Normal distribution.	**E1** **E1** **E1** **[3]**	**1.1** **1.1** **2.2b**	 Dep on one previous E mark	
5	(ii)		$11.2568 < \mu < 11.5132$	**B1** **[1]**	**1.1**	Numbers may be rounded to 2 or 3d.p.	
5	(iii)	(*A*)	Underlying distribution (of percentage of copper) needs to be Normally distributed.	**E1** **[1]**	**1.2**		
5	(iii)	(*B*)	Results from (i) show that this assumption is reasonable.	**E1** **[1]**	**2.3**		
5	(iv)		Confidence interval does not suggest that the mean is different from 11.5% … …since the interval contains 11.5	**B1** **B1** **[2]**	**3.4** **2.2b**		
5	(v)	(*A*)	Standard error is the standard deviation of the sample mean	**B1** **[1]**	**1.2**		
		(*B*)	$\frac{0.1592}{\sqrt{14}}$ (= 0.0425)	**E1** **[1]**	**1.1**		
5	(vi)		Use a larger sample or use a lower confidence level	**E1** **[1]**	**3.5c**		

Question			Answer	Marks	AOs	Guidance	
6	(i)		CI is given by	M1	3.4	For general form	
			$118.86 \pm 1.96 \times \sqrt{\frac{86.57}{70}}$	B1	1.1a	For 1.96	
				M1	1.1	For $\sqrt{\frac{86.57}{70}}$ o.e.	
			$116.68 \leq \mu \leq 121.04$	A1	1.1		
				[4]			
6	(ii)		The sample is large	E1	2.4	For large sample	
			the Central Limit Theorem states that sample means are approximately Normally distributed	E1	2.4	For mention of use of CLT	
				[2]			
6	(iii)		CI width = $2 \times 1.96 \times \sqrt{\frac{s^2}{70}} = 4.8$	M1	3.1b	Or equation based on half CI width	
			$s^2 = 104.96$	A1	1.1		
				[2]			
7	(i)		Bus time – cycle time~N(2, 40)	B1	3.3	For Normal and mean	
				B1	1.1	For variance	
			Probability(time difference < 0) = 0.376	B1	1.1	BC	
				[3]			
7	(ii)		Total for 5 bus journeys N(115, 180)	B1	3.4	For both	
			Probability(total time < 2 hours) = 0.645	B1	1.1	BC	
				[2]			
7	(iii)		Sensible comment e.g. • Factors which delay a bus journey might delay a bicycle journey • Roadworks might cause delays on several days in a row	E1	3.5b		
				[1]			

Question	AO1	AO2	AO3(PS)	AO3(M)	Total
1iA	1	0	0	0	1
iB	1	0	0	1	2
1ii	0	0	0	1	1
1iii	1	0	0	1	2
1iv	2	0	0	1	3
2i	2	0	0	0	2
2ii	2	1	0	0	3
2iii	2	0	0	0	2
3i	1	1	0	0	2
3ii	2	0	0	1	3
3iii	6	0	0	0	6
4i	1	0	0	0	1
4ii	3	1	0	3	7
5i	2	1	0	0	3
5ii	1	0	0	0	1
5iiiA	1	0	0	0	1
5iiiB	0	1	0	0	1
5iv	0	1	0	1	2
5vA	1	0	0	0	1
5vB	1	0	0	0	1
5vi	0	0	0	1	1
6i	3	0	0	1	4
6ii	0	2	0	0	2
6iii	1	0	1	0	2
7i	2	0	0	1	3
7ii	1	0	0	1	2
7iii	0	0	0	1	1
Total	37	8	1	14	60

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AS Level Further Mathematics B (MEI)

Y416 Statistics b

Printed Answer Booklet

Date – Morning/Afternoon

Time allowed: 1 hour 15 minutes

OCR supplied materials:
- Printed Answer Booklet
- Formulae Further Mathematics B (MEI)

You must have:
- Printed Answer Booklet
- Formulae Further Mathematics B (MEI)
- Scientific or graphical calculator

First name	
Last name	

Centre number						**Candidate number**				

INSTRUCTIONS
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- Do **not** write in the bar codes.
- You are permitted to use a scientific or graphical calculator in this paper.
- Final answers should be given to a degree of accuracy appropriate to the context.

INFORMATION
- You are advised that an answer may receive **no marks** unless you show sufficient detail of the working to indicate that a correct method is used. You should communicate your method with correct reasoning.
- The Printed Answer Booklet consists of **12** pages. The Question Paper consists of **8** pages.

1 (i)(*A*)

1 (i)(*B*)

1 (ii)

1 (iii)

1 (iv)

2 (i)

2 (ii)

2 (iii)

3 (i)

3 (ii)

3 (iii)	
4 (i)	

4 (ii)

Mass	Mass – 720	|Mass – 720|	
705	–15	15	
730	10	10	
720	0	0	
691	–29	29	
718	–2	2	
680	–40	40	
731	11	11	
723	3	3	
745	25	25	
708	–12	12	
724	4	4	
736	16	16	

(answer space continued on next page)

4 (ii)	**(continued)**
5 (i)	
5 (ii)	

5 (iii) (*A*)

5 (iii) (*B*)

5 (iv)

5 (v) (*A*)

5 (v) (*B*)

5 (vi)

6 (i)	
6 (ii)	
6 (iii)	

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7 (i)	
7 (ii)	
7 (iii)	

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