



Oxford Cambridge and RSA

**Monday 20 May 2019 – Afternoon**

**AS Level Further Mathematics B (MEI)**

**Y412/01 Statistics a**

**Printed Answer Booklet**

**Time allowed: 1 hour 15 minutes**



**You must have:**

- Question Paper Y412/01 (inserted)
- Formulae Further Mathematics B (MEI)

**You may use:**

- a scientific or graphical calculator



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

\_\_\_\_\_

Last name

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**INSTRUCTIONS**

- The Question Paper will be found inside the Printed Answer Booklet.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- **Write your answer to each question in the space provided in the Printed Answer Booklet.** If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.
- 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.

<b>1(a)</b>	<table border="1"><tr><td><math>r</math></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td><math>P(X=r)</math></td><td><math>4k</math></td><td><math>10k</math></td><td></td><td></td><td></td></tr></table>	$r$	1	2	3	4	5	$P(X=r)$	$4k$	$10k$			
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<b>1(b)</b>													
<b>1(c)</b>													
<b>1(d)</b>													

<b>1(e)</b>	
<b>2(a)</b>	
<b>2(b)</b>	
<b>2(c)</b>	

<b>3(a)</b>	
<b>3(b)</b>	
<b>3(c)(i)</b>	
<b>3(c)(ii)</b>	

<b>4(a)</b>	
<b>4(b)</b>	
<b>4(c)</b>	

<b>5(a)</b>	

<b>5(b)</b>	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Number of females</th> <th style="padding: 5px;">Probability</th> <th style="padding: 5px;">Expected frequency</th> <th style="padding: 5px;">Chi-squared contribution</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">0.049 02</td> <td style="text-align: center;">9.8045</td> <td style="text-align: center;">10.6022</td> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">1.7513</td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4.1274</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">0.267 87</td> <td style="text-align: center;">53.5742</td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">0.144 24</td> <td style="text-align: center;">28.8476</td> <td style="text-align: center;">0.5977</td> </tr> <tr> <td style="text-align: center;">≥5</td> <td style="text-align: center;">0.055 61</td> <td style="text-align: center;">11.1215</td> <td style="text-align: center;">8.7744</td> </tr> </tbody> </table>	Number of females	Probability	Expected frequency	Chi-squared contribution	0	0.049 02	9.8045	10.6022	1			1.7513	2			4.1274	3	0.267 87	53.5742		4	0.144 24	28.8476	0.5977	≥5	0.055 61	11.1215	8.7744
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5(c)


5(d)


<b>6(a)</b>	
<b>6(b)</b>	
<b>6(c)</b>	



<b>6(d)</b>	
<b>6(e)</b>	
<b>6(f)</b>	





