

OCR

Oxford Cambridge and RSA

Accredited

A Level Further Mathematics A**Y544 Discrete Mathematics**

Printed Answer Booklet

Date – Morning/Afternoon

Time allowed: 1 hour 30 minutes

OCR supplied materials:

- Printed Answer Booklet
- Formulae A Level Further Mathematics A

You must have:

- Printed Answer Booklet
- Formulae A Level Further Mathematics A
- Scientific or graphical calculator



First name

Last name

Centre
numberCandidate
number**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.
- The acceleration due to gravity is denoted by $g \text{ m s}^{-2}$. Unless otherwise instructed, when a numerical value is needed, use $g = 9.8$

INFORMATION

- **You are reminded of the need for clear presentation in your answers.**
- The Printed Answer Booklet consists of **12** pages. The Question Paper consists of **8** pages.

1(i)**1(ii)**

	A	B	C	D	E
A	-	12	8	6	4
B	12	-	10	8	10
C	8	10	-	13	10
D	6	8	13	-	10
E	4	10	10	10	-

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1(iv)(a)	<table border="1" style="margin: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>-</td> <td>12</td> <td>8</td> <td>6</td> <td>4</td> </tr> <tr> <th>B</th> <td>12</td> <td>-</td> <td>10</td> <td>8</td> <td>10</td> </tr> <tr> <th>C</th> <td>8</td> <td>10</td> <td>-</td> <td>13</td> <td>10</td> </tr> <tr> <th>D</th> <td>6</td> <td>8</td> <td>13</td> <td>-</td> <td>10</td> </tr> <tr> <th>E</th> <td>4</td> <td>10</td> <td>10</td> <td>10</td> <td>-</td> </tr> <tr> <th>F</th> <td>2</td> <td>11</td> <td>9</td> <td>7</td> <td>5</td> </tr> </tbody> </table>		A	B	C	D	E	A	-	12	8	6	4	B	12	-	10	8	10	C	8	10	-	13	10	D	6	8	13	-	10	E	4	10	10	10	-	F	2	11	9	7	5
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1(iv)(b)																																											
1(v)																																											

2(iii)	
2(i) spare	

Specimen

3(i)	
3(ii)	
3(iii)(a)	
3(iii)(b)	

3(iv)	
3(v)	

Specimen

4(i)	Player B					
		Strategy X	Strategy Y	Strategy Z	row min	maxi min
	Strategy P	4	5	-4		
	Strategy Q	3	-1	2		
	Strategy R	4	0	2		
	col max					
	mini max					
4(ii)						
4(iii)						
4(iv)						

Specimen

4(v)	Player <i>B</i>					
		Strategy <i>X</i>	Strategy <i>Y</i>	Strategy <i>Z</i>	row min	maxi min
	Strategy <i>P</i>	4	5	-4		
	Strategy <i>Q</i>	3	-1	2		
	Strategy <i>R</i>	4	0	2		
	col max					
	mini max					
5(i)						
5(ii)						
5(iii)						

5(iv)(a)	
5(iv)(b)	
5(v)	
5(vi)	
6(i)	

6(ii)	
6(iii)	
6(iv)	

Specimen

6(v)	
6(vi)	

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