

## A Level Further Mathematics A Y544 Discrete Mathematics

Printed Answer Booklet

Version 2

### Date – Morning/Afternoon

Time allowed: 1 hour 30 minutes

**You must have:**

- Question Paper Y544 (inserted)
- Formulae A Level Further Mathematics A

**You may use:**

- a scientific or graphical calculator



First name

Last name

Centre  
number

Candidate  
number

### 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.
- 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.
- Give non-exact numerical answers correct to 3 significant figures unless a different degree of accuracy is specified in the question.
- 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	-

<b>1 (iii)</b>	
<b>1(iv)(a)</b>	
<b>1(iv)(b)</b>	
<b>1(v)</b>	

	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





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

**3(iv)**


**3(v)**


<b>4(i)</b>	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						
<b>4(ii)</b>						
<b>4(iii)</b>						
<b>4(iv)</b>						



<b>4(v)</b>	Player <i>B</i>						
		Strategy <i>X</i>	Strategy <i>Y</i>	Strategy <i>Z</i>	row min	maxi min	
	Player <i>A</i>	Strategy <i>P</i>					
		Strategy <i>Q</i>					
		Strategy <i>R</i>					
		col max					
		mini max					
<b>5(i)</b>							
<b>5(ii)</b>							
<b>5(iii)</b>							

<b>5(iv)(a)</b>	
<b>5(iv)(b)</b>	
<b>5(v)</b>	
<b>5(vi)</b>	
<b>6(i)</b>	

<b>6(ii)</b>	
<b>6(iii)</b>	
<b>6(iv)</b>	

<b>6(v)</b>	
<b>6(vi)</b>	

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