

<b>3 (a)</b>	<table border="1"> <tr> <td><i>A</i></td> <td><i>B</i></td> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>2</td> <td>8</td> </tr> <tr> <td>3</td> <td>27</td> </tr> <tr> <td>4</td> <td>64</td> </tr> <tr> <td>5</td> <td>125</td> </tr> </table>	<i>A</i>	<i>B</i>	1	1	2	8	3	27	4	64	5	125	M1 A1		s.c.a. either 8, 27, 64 or 125
		<i>A</i>	<i>B</i>													
1	1															
2	8															
3	27															
4	64															
5	125															
<b>(b)</b>	<i>A</i> always equals 1 Never ending loop	A1  E1 E1	3  2	must have 125												
<b>Total</b>			<b>5</b>													

Q	Solution	Marks	Total	Comments
<b>3 (a)(i)</b>	$\begin{pmatrix} X & Y \end{pmatrix} \begin{matrix} A & B \\ 5 & 20 \end{matrix}$ 20 0 15 1 10 2 5 3 0 4	M1      A1	2	All correct
<b>(ii)</b>	$\begin{pmatrix} X & Y \end{pmatrix} \begin{matrix} A & B \\ 7 & 29 \end{matrix}$ 29 0 22 1 15 2 8 3 1 4	M1     A2, 1,0	3	
<b>(b)</b>	Divides <i>Y</i> by <i>X</i> to give quotient and remainder	E2,1, 0	2	$y = Bx + A$
<b>Total</b>			<b>7</b>	

Q	Solution			Marks	Total	Comments
<b>4 (a)</b>	<u>A</u>	<u>B</u>	<u>C</u>	M1		SCA
	1	1	2			
	1	2	3	M1		Second pass
	2	3	5			
	3	5	8	A1		Values for C (1 <sup>st</sup> 4)
	5	8	13			
	8	13		A1	4	21 missing
<b>(b)</b>	21, 34, 55			B2,1,0F	2	Ignore 13, – 1EE
<b>(c)</b>	<u>A</u>	<u>B</u>	<u>C</u>	M1		
	1	1	2			
	1	1	1	A1		
	1	1	2	A1 DEP		May be implied via just PRINT lines 1, 1, 2, 2, 2...
	1	1	1			C repeating or 1, 1, 2, 2, 2...
			etc.			
	Continue repeating			E1	4	OE (may be implied)
<b>Total</b>					<b>10</b>	

Q	Solution						Marks	Total	Comments
<b>5 (a)(i)</b>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>X</i> <sub>1</sub>	<i>X</i> <sub>2</sub>			
	1	-4	4				M1		
				0					
					2	2	A1	2	
<b>(ii)</b>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>X</i> <sub>1</sub>	<i>X</i> <sub>2</sub>			
	2	9	9				M1		
				9					
					$-\frac{3}{2}$	$-\frac{6}{2}$	A1	2	OE
<b>(b)(i)</b>	Any values where $D < 0$ or $A = 0$						M1 A1	2	for attempt for correct values
<b>(ii)</b>	Line 25 IF $D < 0$ THEN PRINT "NO SOLS" GOTO M						M1 A1		attempt
	Line 15 IF $A = 0$ THEN PRINT "NOT QUADRATIC" GOTO M						M1 A1	4	attempt
<b>Total</b>								<b>10</b>	