



Complete Mark: ● Incomplete Marks: Ⓐ ✕ ⓧ ⓓ ⓔ ⓑ Ⓒ ⓖ

2 School Code <table border="1" style="width: 100%; height: 100px; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr> <tr><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td></tr> <tr><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td></tr> <tr><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td></tr> <tr><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td></tr> <tr><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td></tr> <tr><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td></tr> </table>							0	0	0	0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	5	5	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8	9	9	9	9	9	9	3 Testing Location Are you taking this test at the school you regularly attend? ☐ Yes. ☐ No, this is not the school I regularly attend. ☐ No, I'm homeschooled.	5 Student ID Number <table border="1" style="width: 100%; height: 100px; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr> <tr><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td></tr> <tr><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td></tr> <tr><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td></tr> <tr><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td></tr> <tr><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td></tr> <tr><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td></tr> </table>																	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	6 Grade Level ☐ Not yet in 6th grade ☐ 6th grade ☐ 7th grade ☐ 8th grade ☐ 9th grade ☐ 10th grade ☐ Above 10th grade
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4 School Fill in information about the school you regularly attend: School Name _____ _____ City _____ State _____ Country _____																																																																																																																																																																																																																																																					

8 Date of Birth

Month	Day	Year
☐ Jan		
☐ Feb		
☐ Mar	0	0
☐ Apr	1	1
☐ May	2	2
☐ Jun	3	3
☐ Jul	4	4
☐ Aug	5	5
☐ Sep	6	6
☐ Oct	7	7
☐ Nov	8	8
☐ Dec	9	9

C

9 Street Address Include apartment number, if applicable.

[illegible]

10 City

[illegible]

11 State

- ☐ AL ☐ KY ☐ ND
☐ AK ☐ LA ☐ OH
☐ AZ ☐ ME ☐ OK
☐ AR ☐ MD ☐ OR
☐ CA ☐ MA ☐ PA
☐ CO ☐ MI ☐ RI
☐ CT ☐ MN ☐ SC
☐ DE ☐ MS ☐ SD
☐ DC ☐ MO ☐ TN
☐ FL ☐ MT ☐ TX
☐ GA ☐ NE ☐ UT
☐ HI ☐ NV ☐ VT
☐ ID ☐ NH ☐ VA
☐ IL ☐ NJ ☐ WA
☐ IN ☐ NM ☐ WV
☐ IA ☐ NY ☐ WI
☐ KS ☐ NC ☐ WY

U.S. Military Bases/Territories

- | | | |
|--------------------------|--------------------------|--------------------------|
| ☐ AA | ☐ AS | ☐ PR |
| ☐ AE | ☐ GU | ☐ UM |
| ☐ AP | ☐ MP | ☐ VI |

13 Country Code

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

14 Mobile Number (U.S. students only)

[illegible]

By providing your mobile number you agree to receive text messages from College Board about our programs, about participating in research surveys, and/or about receiving free college planning services. Msg & Data Rates may apply.

15 Racial/Ethnic Group

- A. ☐ A ☒ B ☐ C ☐ D ☐ E

16 Language Background

- A. **A** **B** **C** B. **A** **B** **C**

17 Grade Point Average

- A B C D E F
G H I J K L

18

- A B C D**

12 Zip or Postal Code

0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z
-	-	-	-	-	-	-	-
/	/	/	/	/	/	/	/

☐ A ☒ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H



1	(A)	(B)	(C)	(D)	9	(A)	(B)	(C)	(D)	17	(A)	(B)	(C)	(D)	25	(A)	(B)	(C)	(D)	33	(A)	(B)	(C)	(D)	41	(A)	(B)	(C)	(D)
2	(A)	(B)	(C)	(D)	10	(A)	(B)	(C)	(D)	18	(A)	(B)	(C)	(D)	26	(A)	(B)	(C)	(D)	34	(A)	(B)	(C)	(D)	42	(A)	(B)	(C)	(D)
3	(A)	(B)	(C)	(D)	11	(A)	(B)	(C)	(D)	19	(A)	(B)	(C)	(D)	27	(A)	(B)	(C)	(D)	35	(A)	(B)	(C)	(D)					
4	(A)	(B)	(C)	(D)	12	(A)	(B)	(C)	(D)	20	(A)	(B)	(C)	(D)	28	(A)	(B)	(C)	(D)	36	(A)	(B)	(C)	(D)					
5	(A)	(B)	(C)	(D)	13	(A)	(B)	(C)	(D)	21	(A)	(B)	(C)	(D)	29	(A)	(B)	(C)	(D)	37	(A)	(B)	(C)	(D)					
6	(A)	(B)	(C)	(D)	14	(A)	(B)	(C)	(D)	22	(A)	(B)	(C)	(D)	30	(A)	(B)	(C)	(D)	38	(A)	(B)	(C)	(D)					
7	(A)	(B)	(C)	(D)	15	(A)	(B)	(C)	(D)	23	(A)	(B)	(C)	(D)	31	(A)	(B)	(C)	(D)	39	(A)	(B)	(C)	(D)					
8	(A)	(B)	(C)	(D)	16	(A)	(B)	(C)	(D)	24	(A)	(B)	(C)	(D)	32	(A)	(B)	(C)	(D)	40	(A)	(B)	(C)	(D)					



1	A	B	C	D	9	A	B	C	D	17	A	B	C	D	25	A	B	C	D	33	A	B	C	D
2	A	B	C	D	10	A	B	C	D	18	A	B	C	D	26	A	B	C	D	34	A	B	C	D
3	A	B	C	D	11	A	B	C	D	19	A	B	C	D	27	A	B	C	D	35	A	B	C	D
4	A	B	C	D	12	A	B	C	D	20	A	B	C	D	28	A	B	C	D	36	A	B	C	D
5	A	B	C	D	13	A	B	C	D	21	A	B	C	D	29	A	B	C	D	37	A	B	C	D
6	A	B	C	D	14	A	B	C	D	22	A	B	C	D	30	A	B	C	D	38	A	B	C	D
7	A	B	C	D	15	A	B	C	D	23	A	B	C	D	31	A	B	C	D	39	A	B	C	D
8	A	B	C	D	16	A	B	C	D	24	A	B	C	D	32	A	B	C	D	40	A	B	C	D



1 (A) (B) (C) (D) 8 (A) (B) (C) (D)
2 (A) (B) (C) (D) 9 (A) (B) (C) (D)
3 (A) (B) (C) (D) 10 (A) (B) (C) (D)
4 (A) (B) (C) (D)
5 (A) (B) (C) (D)
6 (A) (B) (C) (D)
7 (A) (B) (C) (D)

Figure 1 displays three 10x10 grids illustrating the evolution of a 1D cellular automaton over 10 time steps. The grids are labeled 1 through 10, corresponding to time steps $t=0$ through $t=9$. The initial state (Grid 1) shows a single '1' at position (0,5). Subsequent grids show the pattern spreading outwards from the center, with '1's appearing in adjacent cells. The evolution follows a predictable pattern where the number of '1's increases and their positions are determined by the previous state.



1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D
21	A	B	C	D

Figure 1 displays four 10x4 grids, labeled 22, 23, 24, and 25, showing the evolution of a pattern. Each grid has a top row of 4 empty cells and a bottom row of 4 empty cells. The middle 8 rows contain a pattern of dots. In grid 22, the pattern is a single dot in the second column of the second row. In grid 23, the pattern is a single dot in the second column of the second row. In grid 24, the pattern is a single dot in the second column of the second row. In grid 25, the pattern is a single dot in the second column of the second row.

By providing your email address, if you're 13 or over, you're giving College Board permission to contact you via email.

A	A	A	A	0	0	0
B	B	B	B	1	1	1
C	C	C	C	2	2	2
D	D	D	D	3	3	3
E	E	E	E	4	4	4
F	F	F	F	5	5	5
G	G	G	G	6	6	6
H	H	H	H	7	7	7
I	I	I	I	8	8	8
J	J	J	J	9	9	9
K	K	K	K			
L	L	L	L			
M	M	M	M			
N	N	N	N			
O	O	O	O			
P	P	P	P			
Q	Q	Q	Q			
R	R	R	R			
S	S	S	S			
T	T	T	T			
U	U	U	U			
V	V	V	V			
W	W	W	W			
X	X	X	X			
Y	Y	Y	Y			
Z	Z	Z	Z			

0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

0 1 2 3 4 5 6