

## Grade 8 Mathematics Worksheet

### Functional number patterns

#### Questions:

- Peter made up a 7 by 7 table with each row having a certain pattern that it is following. In each row the next term will be two less than the previous term.

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

- Complete the table using the rule in each row.
- In your own words, describe the rule that is being formed down each column.
- Use this rule to write down the sequence of numbers in the 6<sup>th</sup> row and 7<sup>th</sup> row.

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### Solution

1. a)

	1	2	3	4	5	6	7
1	-1	-3	-5	-7	-9	-11	-13
2	2	0	-2	-4	-6	-8	-10
3	7	5	3	1	-1	-3	-5
4	14	12	10	8	6	4	2
5	23	21	19	17	15	13	11
6							
7							

b) Each column increases by -2 units, and each row increases by consecutive odd numbers starting with 3.

	1	2	3	4	5	6	7
1	-1	-3	-5	-7	-9	-11	-13
2	2	0	-2	-4	-6	-8	-10
3	7	5	3	1	-1	-3	-5
4	14	12	10	8	6	4	2
5	23	21	19	17	15	13	11
6							
7							

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c)

	1	2	3	4	5	6	7
1	-1	-3	-5	-7	-9	-11	-13
2	2	0	-2	-4	-6	-8	-10
3	7	5	3	1	-1	-3	-5
4	14	12	10	8	6	4	2
5	23	21	19	17	15	13	11
6	34	32	30	28	26	24	22
7	47	45	43	41	39	37	35