

## 2014-NL-01-EN Secret number reminder

0 hard		I: medium		II: easy		III: easy		IV: ----			
<input checked="" type="checkbox"/> ALG		<input checked="" type="checkbox"/> INF		<input type="checkbox"/> STRUC		<input type="checkbox"/> PUZ		<input checked="" type="checkbox"/> SOC		<input type="checkbox"/> USE	

Answer Type: Multiple Choice Mandatory for: none

### Body

Maciej carries a bookmark with this table on it to help him remember his secret four digit number.

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

If his secret number is 8526, all he has to do is to remember the word HELP.

To retrieve his number, he looks up the letters of the word HELP and finds the corresponding digits in the top row of the table. Another example: The word LOVE can be used to help Maciej remember the secret number 2525.

### Question

Maciej has to remember a new secret number. Only three of the following words produce this new number. Which one does not?

### Answer

- A. DOME
- B. NEMO
- C. NONO
- D. NEWY

### Explanation

The answer is C.

A, B and D each produces the secret number 4535 while C produces 4545.

### It's informatics

Secret numbers are used a lot and some people find it hard to remember them. Using a table or another tool to remember your secret number using a simple algorithm is a way to retrieve the secret information without writing it down.

There are many ways of finding the word that produces a different number. One way is to convert each word to a number and check which is different. Another way is to compare the words position by position. As long as all letters at a position correspond to the same digit the words will produce the same number. For example D, N, N and N all correspond to 4, while M, M, N and W does not correspond to the same digit. Since M, M and W correspond to 3 and N corresponds to 4 we know that C is different. The benefit of the second approach is that you do not have to check every letter of every word.

## Keywords

Information hiding

## Websites

On [http://www.pinreminder.com/memocard\\_nederlands.swf](http://www.pinreminder.com/memocard_nederlands.swf) a more sophisticated tool is shown.

## Internal Use

## Wording

## Comments

Fredrik Heintz, [fredrik.heintz@liu.se](mailto:fredrik.heintz@liu.se), 2014-06-04, reformulated the task to make it clearer and to add more of a story. Changed answer D to be closer to a real word. Changed pin-code to secret number. Expanded the It's Informatics part.

## Graphics

## Files

All additional files for this task (graphics, scripts, etc.)  
2014-NL-01-EN.odt (this file)

## Authorship

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