



Numerical Palindromes

A *palindrome* is a word, phrase, or number that is the same when it is read frontwards or backwards. Words like toot and dad are simple palindromes. “A Toyota” and “Madam, I’m Adam” are examples of phrases that are palindromes. Numbers like 1221 and 576675 are numerical palindromes.

NOON
MOM
12321
401104
DID

The following is a method to generate a numerical palindrome.

- | | |
|--------------------------------------|-----------------------|
| 1. Start with any four-digit number. | 1563 |
| 2. Reverse the digits. | 3651 |
| 3. Add the original number. | $1563 + 3651 = 5214$ |
| 4. Reverse the digits. | 4125 |
| 5. Add the numbers. | $5214 + 4125 = 9339$ |
| | ↑ |
| | This is a palindrome! |

Do this for six different numbers to test the process. The number of times that you will have to repeat the process of reversing and adding will vary. Can you find another way to produce palindromes?
