Palindromes Answers

Palindromes are words, phrases or numbers that read the same backwards as forwards.
Examples of words or phrases that are palindromes:

MUM
RACECAR
DENNIS SINNED
MADAM I'M ADAM
GO HANG A SALAMI I'M A LASAGNA HOG
WAS IT ELIOT'S TOILET I SAW
NEVER ODD OR EVEN
DO GEESE SEE GOD
GLENELG
DAD

Examples of numbers that are palindromes:

121   4554   8760678   55   100001

1. Jacqui had lunch at 12:21. She noticed this was a palindrome. If the time she finished lunch was at the next palindrome, how long was her lunch?
(Use 12 hour time)   **1:01**

40 min

2. Floyd also started his lunch at 1221 using 24 hour time. If he finished his lunch at the next time that was a palindrome using the 24 hour time, how long was his lunch?   **1331**

70 min

3. 2002 was the last year that was a palindrome. List the next three years that will be palindromes.

2112   **2222**   **2332**

4. The 20th of February 2002 (20-02-2002) was a palindrome.
What will be the next two dates that are palindromes?

[ ]   [ ]

5. It has been claimed that reversing a number and adding will always lead to a palindromic number.

Examples:

① 53
  35
  88

② 2354
 4532
 6886

③ 103694
 496301
 599995

④ 874
 478
1352
2531
3883

⑤ 987
 789
1776
6771
8547
7458
16005
50061
66066

Notice that sometimes the reversing and adding needs to be repeated several times before a palindrome is formed

It can be seen that examples *1*, *2* and *3* only needed 1 step before a palindrome was formed. Example *4* needed 2 steps and example *5* needed 4 steps.
On a separate sheet of paper find out the number of steps needed to form palindromes from the following numbers.

Number	38	439	837	79
Number of Steps	**1**	**3**	**5**	**6**

Find four numbers that require at least three steps before a palindrome is formed.

Number				
Number of Steps				

For a real challenge find the number of steps needed to formed a palindrome from the number 89.
(It is more than 20 steps!)   **24**