MATH CHALLENGE 1

SOLUTIONS

Palindrome Riddles/Problems

1. I am the largest two digit number and I am a palindrome. What number am I?

   Answer: 99

2. I am a palindrome. I am >11 (greater than eleven) and <50 (less than fifty). I am an odd number. What am I?

   Answer: 33

3. I am a three digit number and I am a palindrome too. I am less than 500. I am greater than 200. All my digits are odd. If you take each of my three digits and add them together, they equal 7. What number am I?

   Answer: 313

4. I am a four digit number. I have a one in my thousands place, and a two in my hundreds place. I am a palindrome. What number am I?

   Answer: 1,221

5. I am also a palindrome. I am greater than the number of days in a year and less than the product of 19 and 20. What number am I?

   Answer: 373

6. I'm a seven digit number, and I am a palindrome. Five of my digits are zeros. I am the greatest number possible with those characteristics. What number am I?

   Answer: 9000009

7. The odometer of a car read 15851 when the driver noticed that the number was palindromic. "Interesting" said the driver to herself. "It will be a long time before it happens again." However, two hours later, the odometer showed a new palindromic number. What was the new palindrome number in the car's odometer?

   Answer: 15951

8. Another car's odometer shows 72927 miles, a palindromic number. What is the minimum number of miles you would need to travel to form another?

   Answer: 110 miles. (73037)

9. Two digit palindromes must have identical digits (11, 22, 33,…). You have 9 choices for the first digit, and the second digit is determined for each, so you have 9 palindromes between numbers 10-100. How many palindromic numbers are there between 100-1000?
   Hint: one way to approach this problem is to make a list and look for a pattern.
   Three-digit palindromes must have identical first and last digits, but the middle digit is a free choice. There are 9 choices for the first digit (0 is excluded), and for each choice, there are 10 choices for the middle digit, so the answer is 9*10.

   Answer: Answers: 90

10. 10. What is the largest palindrome made from the product of two 2-digit numbers?
    Hint: a) think about whether you should use small 2-digit numbers or large 2-digit numbers?
    b) use a calculator to do 'guess and check' strategy.
    9009 = 91 * 99.

    Answer: 9009

Math Challenge Tournament *registration opens on October 9, 2015 at www.ellipsisacademy.com.*