February 10, 2012 (2-10-2012)—Fifth Palindrome Day of the 21st Century!

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The full date number of Friday, February 10th, 2012 expressed in the month-day-year date format as 2-10-2012 (or simply 2102012) is a palindrome day, the only one to occur this year. Note that the 21st century contains twelve eight-digit and twenty-six seven-digit palindrome dates (a total of 38) and February 10th, 2012 will be the fifth one of these.

In recognition of this palindrome day, I got curious and tapped into the numerical properties of the date number of February 10th just for fun. Here are my findings which I hope you will enjoy reading:

First, amazingly, February 10th was also a palindrome day in day-month-year date format in 2001 written as 10-02-2001 or 10022001 (note that this was an eight-digit palindrome day)! Indeed, it was the first palindrome day to occur in this (third) millennium!

Note that before 2001, the last time February 10th became a palindrome day was in 1201 in the day-month-year date format expressed as 1021201 (a seven-digit palindrome day)! Before that was in 1012 in month-day-year date format written as 2101012 (a seven-digit palindrome day)!

Second, if all palindrome dates in both date formats (month-day-year and day-month-year) are considered, interestingly enough, February 10th, 2012 (2102012) marks the 10th palindrome day of this century!

After 2102012, February 10th will become a palindrome day one more time in this millennium in 2201 if expressed in the day-month-year date format as a seven-digit palindrome day as 10-2-2201 (1022201). After that, February 10th will not become a palindrome day again for 1000 years-until 3012 on 2103012!

Third, in terms of its prime factors, 2102012 = 2 x 2 x 11 x 11 x 43 x 101! Interestingly enough, 2102012 is only made of digits 0, 1, and 2 and its prime factors are only made of digits 0, 1, 2, 3 and 4.

Fourth, if date number 2102012 is split as 210 and 2012, these two numbers add up to 2222! Note that number 2102012 is divisible by 2222. Also, if 2102012 is split into numbers 2, 10, 20, and 12, these four numbers add up to 44, another palindrome number! Note that number 2102012 is divisible by 44 as well.

Fifth, the digits of 2102012 add up to 8 and the product of its nonzero digits is also 8.

In general, February 10 expressed as 210 is a unique calendar date since 210 = 2 x 3 x 5 x 7, that is, the product of the first four prime numbers! (It is the only calendar date when expressed as a single month-day or day-month number which equals the product of four consecutive primes.) Also, it's made of digits 2, 1 and 0

which are consecutive numbers. In addition, its reverse is 012 = 3 x 4, where digits 0, 1, 2, 3 and 4 without the equal and multiplication signs are also consecutive numbers!

Lastly, this year contains two palindrome dates in the day-month-year date format used by the rest of the world. These are 21 February 2012 (expressed as 21022012, an eight-digit palindrome day) and 2 October 2012 (2102012, a seven-digit palindrome day which corresponds to February 10, 2012 if interpreted in the month-day-year date format). It turns out there is a fascinating connection between palindrome days 2102012 and 21022012: If one divides 2102012 by 1111 and multiplies the result by 11111, guess what comes out: 21022012!

Happy palindrome day on Friday, February 10, 2012!