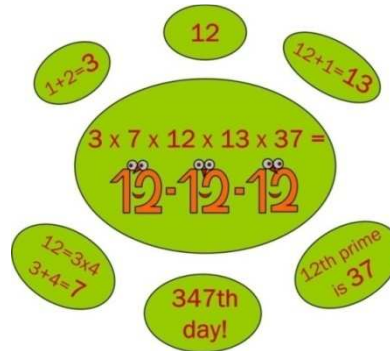


Happy December 12, 2012—12-12-12 (121212)

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Wednesday, December 12, 2012 marks a numerically special calendar date if expressed as 12-12-12 (or simply 121212) because its month, day, and the rightmost two digits of its year numbers are all the same. The next such calendar date will occur 89 years later in 2101 (01-01-01).

On this occasion, I asked my usual question “Is there any other interesting unique numerical property about number 12 and date number 121212?” Here is what I found out which I hope you have fun reading:

1. **012 = 3 x 4** (notice the first five consecutive digits are in numerical order)
2. The prime factors of **12** are the **1st** and **2nd** prime numbers (which are 2 and 3)
3. Square of 12 is 144 and 144 is the 12th Fibonacci number (144 is also the only multi-digit perfect square Fibonacci number)
4. 121212 is divisible by 12, 13 and 14
5. What makes calendar date 121212 in the 21st century even more special is the fact that 21 is the reverse of 12
6. $12 = 3 \times 4$ where **3** + **4** = **7** and interestingly enough, 121212 happens to be the **347th** day of 2012!
7. The 12th prime number is **37**. The digits of 12 add up to **3**. $12 = 3 \times 4$ where $3 + 4 = 7$. One plus 12 is **13**. So, I derived numbers **37**, **3**, **7** and **13** from **12**. Now, go ahead and multiply these five numbers ($3 \times 7 \times 12 \times 13 \times 37$), what comes out? (121212!) (By the way, 3, 7 and 13 are the 2nd, 4th, and 6th prime numbers where interestingly enough, $2 + 4 + 6 = 12$.)
8. 121212 equals $2 \times 7 \times 3 \times 3 \times 13 \times 37 \times 2$ where removing all the multiplication signs results in 273313372, a nine-digit palindrome number! (Another version is $7 \times 3 \times 2 \times 3 \times 13 \times 2 \times 37$)

As an aside, $2012 = 2 \times 2 \times 503$ where the sum of these three primes is 507 and interestingly enough, 507 and its reverse (705) add up to 1212! Also, note that 12-12-2010, which occurred in 2010, is a one-of-a-kind reverse perfect square day¹. In addition, 1212 in year 2121 next century is an eight-digit palindrome day that will be common to both calendar date formats (month-day-year and day-month-year) since it is 12122121.

Have a happy 121212!

[1] A. S. Inan, “April’s reverse square date,” *The Beacon*, Vol. 112, Issue No. 21, pp. 13 & 14, University of Portland, Portland, Oregon, March 31, 2011.