Happy 59th Birthday, Mary Gross!

(By Aziz S. Inan, Ph.D., Electrical Engineering, University of Portland, Portland, Oregon)
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American comedian and actress Mary Gross (born on March 25, 1953, or simply, 3251953), perhaps best known for her four-year stint on Saturday Night Live between 1981 and 1985, has a *numerically* special 59th birthday coming up on Sunday, March 25, 2012 and here is why:

1. The difference between the squares of Mary's new age (59) and its reverse (95) yields number 5544. Note that this number is very special. Why?

First, if 5544 is split as 55 and 44, these 2 numbers add up to 99 and coincidentally, the 99th prime number happens to be 523, which is reverse of 325 (that is, Mary's birth date, March 25th).

Second, 5544 divided by the difference of the digits of Mary's new age (9−5=4) results in 1386. (By the way, 13 and 86 which make up 1386 also add up to 99.) Interestingly enough, the 1386th prime number is 11491 and the digits of 11491 add up to 16, the reverse of which is 61. (Similarly, if number 11491 is split as 11, 49 and 1, these three numbers add up to 61.)

Now, the 61st prime number is 283. So, we picked up two prime numbers based on Mary's new age: 283 and 11491. What number comes out when these two prime numbers (283 with 11491) are multiplied? (Answer: 3251953!)

2. Note that number 5544 obtained above also equals the sum of Mary's birth year (1953) and its reverse. Interesting coincidence!

3. Also, the difference of numbers 1386 and 61 (which correspond to prime numbers 11491 and 283) is 1325. Note that the rightmost three digits of this number again indicate March 25th. Also, if 1325 is split as 13 and 25, what is the product of 13 and 25? (Answer: 325!) Isn't this something?

4. Also, 6831 (which is reverse of 1386) equals 27 x 11 x 23 and these three numbers add up to 61. (This would have been another way to produce number 61 from 1386.)

5. One can write 325 (March 25th) as 0325. Grouping the alternating digits of 0325 yields numbers 02 and 35 and these two numbers put side-by-side result in 3502. (Note that the reverse of 3502 is the year when Mary will turn 100!) 3502 equals 2 x 17 x 103 and these three primes add up to 122, the reverse of which is 221. So, again using prime factors, we produced number 221 from 3502. What comes out if one integrates numbers 221 and 3502 (like alternating their digits by inserting the leftmost digit of 221 between digits 3 and 5, the second digit of 221 between 5 and 0, etc.) to produce a single seven-digit number? (Answer: 3252012!)

After her 59th birthday, Mary will have other numerically special birthdays in the future some of which are summarized as follows:

1. Mary's 61st birthday in 2014 is somewhat special. Why? First, 2014 = 2 x 19 x 53 where the last two numbers put side-by-side yield 1953 (Mary's birth year)! Second, if 2014 is split as 20 and 14, 20 plus reverse of 14 yield 61! Also, 3252014 is divisible by prime 523 (reverse of 325).

2. Mary's 63rd birthday to occur in 2016 is very special since 2016 equals the sum of all integers from 1 to 63.

3. Mary's 68th birthday in 2021 is also interesting since 2021 equals 3 x 325 + 2 x 523.

4. Mary's 139th birthday to occur in 2092 is also interesting since 2092 equals 4 times 523.

5. Mary's 200th birthday in 2153 will be extremely special since 2153 happens to be the 325th prime number. Wow!

Have a happy 59th birthday, Mary Gross!

Aziz S. Inan is a professor of electrical engineering teaching at University of Portland for 23 years. As a hobby, he enjoys finding interesting numerical properties associated with numbers, connections and coincidences between numbers, calendar dates, birthdays, historical dates, etc. He can be reached at 503-943-7429 or ainan@up.edu. (Note that the purpose of this article is solely recreational and for fun.)