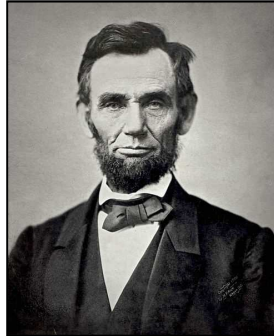


Happy 205th Birthday, Abraham Lincoln!

(Aziz S. Inan, Ph.D., Professor, Electrical Engineering, University of Portland, Portland, Oregon)
(February 11, 2014)



Abraham Lincoln
(February 12, 1809-April 15, 1865)

Abraham Lincoln (February 12, 1809-April 15, 1865) served as the 16th President of the United States, from March 4, 1861 until his assassination on April 15, 1865 [1]. This Wednesday, February 12, 2014 (02-12-2014, or simply, 02122014), marks Lincoln's 205th birthday.

In honor of this great man and in order to celebrate his 205th birthday, I constructed the following numerical birthday brainteasers:

1. The date of Lincoln's upcoming birthday, 02122014, and his birthday number, 205, are connected numerically. How? First, replacing the rightmost two digits of 2014 with their sum yields 205. (Each of Lincoln's birthdays between 2010 and 2018 has this property.) Second, the day and the month numbers of Lincoln's birthday add up to 14, which coincides with the rightmost two digits of 2014, and the reverse of 14 (41) multiplied by the sum of its digits yields 205.
2. In addition to its rightmost two digits being 14, the reverse of 2014 (4102) equals 14 times 293, where the reverse of 293 (392) is twice 14 squared. Also, Lincoln's full name consists of 14 letters.
3. If the full date of Lincoln's upcoming birthday, 02122014, is split into 02, 12, 20, and 14, these four numbers add up to 48, the reverse of which is six times 14. Also, if 2014 is split into 20 and 14, the sum of these two numbers is 34, the reverse of which is 43, the 14th prime number, and interestingly enough, Lincoln's birthday always coincides with the 43rd day of each year. Also, two times the sum of the digits of 43 and two plus the product of the digits of 43 each equal 14.
4. Lincoln's full birthday, 02121809, also has a special numerical connection to his upcoming birthday number, 205. If split into 02, 12, 18, and 09, these numbers add up to 41, and as indicated earlier, 41 times the sum of its digits yields 205. Also, the prime factors of Lincoln's birth year 1809 (3 and 67) add up to 70, which equals 14 times the sum of the digits of 14.
5. The difference between the prime factors of Lincoln's birth year, 1809, is 64, which is four times 16, and 16 highlights the 16th US Presidency of Lincoln. In addition, the digits of Lincoln's full birthday, 02121809, add up to 23, the reverse of which is 32, which is equal to twice 16. Also, 205 is equal to 5 times 41, where these two primes add up to 46, the reverse of which is 64, which equals four times 16. In addition, 5 and 41 are the 3rd and 13th prime numbers, where 3 plus 13 yields 16.

6. If Lincoln's full birthday 02121809 is split as 02, 12, 18, and 09, and if each one of these four numbers is reversed, the sum of these four numbers is 212, Lincoln's birth date, February 12. Wow! Interestingly enough, Lincoln's 212th birthday which will occur seven years later, in 2021, will be a very special one, since his birthday number 212 also corresponds to his birth date.
7. If numbers 1 to 26 are assigned to the letters of the English alphabet (A = 1, B = 2, etc.), the numbers assigned to the letters of "Abraham" and "Lincoln" each add up to 44 and 79. Interestingly enough, 44 plus 79 is 123, which is 41 times the difference of the digits of 41. (Note that 41 times the sum of its digits is 205.) Also, the product of the digits of 44 and the sum of the digits of 79 are each equal to 16, which highlights the 16th US Presidency of Lincoln. In addition, the reverse of the difference of 44 and 79 equals 53, the 16th prime number. Also, twice the sum of the digits of 53 yields 16. Interestingly enough, Lincoln became the 16th US President during the 53rd year, or the 16th prime year, of his life. Also, the digits of 1861, when Lincoln became the 16th US President, add up to 16, which also correspond to the reverse of the rightmost two digits of 1861.
8. Both 0212 and 2014 (which side by side make up Lincoln's 205th birthday) are each divisible by 53 (the 16th prime). In addition, 0212 is $2 \times 2 \times 53$, where the sum of these primes is 57, which equals the product of primes 3 and 19, where 19 minus 3 is equal to 16.
9. Lincoln died in 1865, on 415 (April 15), where 415 equals the product of primes 5 and 83. Note that 5 plus 83 is 88, where the sum and the product of the digits of 88 are 16 and four times 16, respectively. Also, if number 415 is split into primes 41 and 5, the product of these two numbers equals Lincoln's upcoming birthday number, 205.
10. Lincoln died at age 56, which equals four times 14. In addition, the sum of the squares of Lincoln's age of death (56) yields 61, the reverse of which is 16. Also, 56 coincide with the reverse of the rightmost two digits of Lincoln's year of death, 1865.

Happy 205th birthday, Abraham Lincoln!

[1] Abraham Lincoln, Wikipedia
http://en.wikipedia.org/wiki/Abraham_Lincoln