



Happy 100th Birthday, Rosa Parks!

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Monday, February 4, 2013 marks the 100th birthday of the African-American civil rights activist Rosa Louise McCauley Parks, who was born on February 4, 1913 (02-04-2013 or simply, 02041913) and died on October 24, 2005 (10242005), at age 92 [1]. On December 1, 1955 (12011955), Mrs. Parks, who was working as a seamstress at the time, boarded a city bus in Montgomery, Alabama to go home from work. On this bus, Mrs. Parks refused to give up her seat in the colored section of the bus to a white passenger after the white section seats got filled. As a result, Mrs. Parks got arrested and convicted for violating the laws of segregation. Mrs. Parks' act of defiance and determination on that day initiated a new era in the American quest for freedom and equality. In her later life, Mrs. Parks became an international icon of resistance to racial segregation. In 1999, President Bill Clinton awarded Rosa Parks with the 250th Congressional Gold Medal, the highest honor a civilian can receive in the United States. The US Congress called Rosa Parks "the first lady of the civil rights" and "the mother of the freedom movement."

As a tribute to Rosa Parks on her 100th birthday, I constructed the following numerical brainteaser birthday gift for her:

1. Rosa Parks' centennial birthday is numerically special. Why? First, if Mrs. Parks' 100th birthday 02042013 is split in the middle as 0204 and 2013, these two numbers add up to 2117, which equal 29 times 73. Interestingly enough, twice the sum of these two primes yields 204, that is, Mrs. Parks' birth date, February 4! Isn't this something? Wait, there is more.
2. Second, if 2013 is split as 201 and 3, these two numbers add up to 204. Wow!
3. Third, 2013 plus its reverse (3102) is 5115, which equal  $3 \times 5 \times 11 \times 31$ . Amazingly, twice the sum of these primes yields 100, Mrs. Parks' birthday number!
4. Fourth, if numbers 1 to 26 are assigned to the letters of the English alphabet as A = 1, B = 2, etc., the numbers assigned to the letters of "February" add up to 96 and interestingly enough, "February" plus 4 also yields 100!
5. Rosa Parks' birth date, February 4th expressed as 204 possess a unique property. How? Note that 204 equals  $2 \times 2 \times 3 \times 17$ . Coincidentally, the sum of these four primes equal 24, which can also be interpreted as February 4. In addition, the sum of the digits of 12011955 (the day when

Mrs. Parks resisted to giving up her bus seat) is 24. Also, Mrs. Parks was 42 years old on 12011955, where reverse of 42 also equals 24!

6. Mrs. Parks' birth date February 4th is the 35th day of each year where reverse of 35, which is 53, equals the sum of the numbers assigned to the letters of her first name, "Rosa."
7. This is a bit of a stretch but still fun. Note that Mrs. Parks' birth year 1913 and its reverse 3191 are the 293rd and 452nd prime numbers [2]. The difference of 293 and 452 is 159, which equals  $3 \times 53$ , where 53 corresponds to the sum of the numbers assigned to the letters of "Rosa" and the reverse of the sum of 3 and 53 corresponds to "Parks."

In addition to the above, I also found out some of Rosa Parks' future birthdays in this (21st) century that possess unique numerical properties:

8. Mrs. Parks' 103rd birthday to occur in 2016 expressed as 242016 is divisible by 24 (February 4). Also, 2016 equals twice 24 times its reverse.
9. Mrs. Parks' 105th birthday expressed as 2042018 equals  $2222 \times 919$  where 2222 is 204 plus 2018. Also, if expressed as 242018, this number equals  $118 \times 2051$  where 118 correspond to the sum of the numbers assigned to the letters of "Rosa Parks."
10. Mrs. Parks' 125th birthday in 2038 has at least two unique properties. First, if expressed as 2042038, the reverse of 2042038, which is 8302402, equals  $2 \times 23 \times 101 \times 1787$  where these four primes add up to Mrs. Parks' birth year 1913! Second, if expressed as 242038, its reverse 830242 is divisible by 1913!
11. Mrs. Parks' 127th birthday to occur in 2040 is indeed one-of-a-kind calendar date! Why? First, if expressed as 2042040, this date number equals  $2 \times 2 \times 2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17$ , that is, it is divisible by the first seven prime numbers! Second, date 2042040 is divisible by five consecutive Fibonacci numbers which are 8, 13, 21, 34, and 55. In addition, date 2042040 is also divisible by 204 (Mrs. Parks' birth date).
12. Mrs. Parks' 128th birthday in 2041 will be a perfect square date [3] since 2042041 equals  $1429 \times 1429$ !
13. Mrs. Parks' 142nd birthday is 242055. The reverse of 242055 is 550242, which equals  $2 \times 3 \times 3 \times 7 \times 11 \times 397$ . Interestingly enough, the reverse of the sum of the prime factors of 550242 yields 24 (that is, February 4)!
14. Mrs. Parks' 151st birthday expressed as 242064 will also be a perfect square date ( $492 \times 492$ ).

My hope is that this centennial birthday gift will serve to inspire younger generations to learn about Rosa Parks and appreciate her influence on their life. Happy 100th birthday, Rosa Parks!

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[1] [http://en.wikipedia.org/wiki/Rosa\\_Parks](http://en.wikipedia.org/wiki/Rosa_Parks)

[2] <http://www.tsm-resources.com/alists/prim.html>

[3] A. S. Inan, "Century of Squares," *The Beacon*, Vol. 110, Issue No. 18, p. 14, University of Portland, Portland, Oregon, February 26, 2009.