

Happy 85th Birthday, Buzz Aldrin!

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Buzz Aldrin (born Edwin Eugene Aldrin, Jr., January 20, 1930, or simply, 1201930) is a former American astronaut and the second person to walk on the Moon [1]. He was the lunar module pilot on Apollo 11, the first manned lunar landing in history. At age 39, Aldrin and his mission commander, Neil Armstrong, stepped on the Moon, on July 21, 1969 (7211969). Aldrin is also a retired United States Air Force pilot.

This Tuesday, January 20, 2015 marks Aldrin's 85th birthday. In honor of this brave man, I constructed the following numerical brainteasers as a birthday gift for him:

1. Aldrin's 84th birthday: If numbers 1 to 26 are assigned to the letters of the English alphabet (A = 1, B = 2, etc.), the sum of the numbers assigned to the letters of Aldrin's names, Edwin, Eugene, Buzz, and Aldrin add up to 55, 57, 75, and 58 respectively. Interestingly enough, if Aldrin's 84th birthday last year expressed as 1202014 is split as 1, 20, 20, and 14, these numbers add up to 55, coinciding with the sum of the numbers assigned to his name, "Edwin". Also, 84 equals 7 times 12 where 7 and reverse of 12 put side by side make 721, representing the date of Aldrin's historic Moon landing. Also, the prime factors of 1969 (the year Aldrin stepped on the Moon) which are 11 and 179 differ by twice 84.
2. 85th birthday: Aldrin's 85th birthday is numerically special. Why? First, number 85 can be interpreted as his colleague and friend Neil Armstrong's birth date, August 5. Second, the reverse of 85 which is 58 equals the sum of the numbers assigned to "Aldrin". (Note that 58 also equal half of the sum of 7, 21, 19, and 69, which make up the full date of Aldrin's historic Moon landing day, 7211969.) Third, the difference of the squares of the digits of 85 yields 39, Aldrin's age when he landed on the Moon.
3. 86th birthday: If Aldrin's 86th birthday, expressed as 1202016, is split as 1, 20, 20, and 16, these four numbers add up to 57, which coincides with the sum of the numbers assigned to the letters of his name, "Eugene", and the reverse of the sum of the numbers assigned to the letters of his nickname, "Buzz". Also, $86 = 48 + 32 + 6$ where $8 \times 6 = 48$, $4 \times 8 = 32$, and $3 \times 2 = 6$.
4. 87th birthday: If Aldrin's 87th birthday, 1202017, is split as 1, 20, 20, and 17, these numbers add up to 58, which equal the sum of the numbers assigned to the letters of "Aldrin".
5. 88th birthday: In 2018, Aldrin will turn 88, where 88 equals the sum of 19 and 69, which make up 1969, the year when Aldrin walked on the Moon. Also, 88 is one-fourth the sum of the cubes of the digits of 721 (representing Aldrin's historic Moon landing day, July 21). In addition, the numbers assigned to the letters of NASA (National Aeronautics and Space Administration) add up to 35 and 35 plus its reverse, 53, is 88. (Also, as an aside, the prime factors of 35 are 5 and 7 which when put side by side yield 57, coinciding with sum of the numbers assigned to the letters of Aldrin's name, "Eugene" and reverse of 57 is 75 representing the sum of the numbers assigned to the letters of "Buzz." In addition, the digits of Aldrin's historic Moon landing day, 7211969, also add up to 35.)

6. 89th birthday: Aldrin's last Fibonacci-number age, 89, will occur in 2019. Also, the squares of the digits of 58 (which equal the sum of the numbers assigned to the letters of "Aldrin") add up to 89. In addition, the sum of the squares of 75 and 58 (which coincide with sum of the numbers assigned to the letters of "Buzz" and "Aldrin" respectively) yield 8989. Wow!
7. 90th birthday: Aldrin will turn 90 in 2020, where 90 equals the sum of the squares of the digits of 39, his age when he stepped on the Moon. His 90th birthday consists of digit 1 followed by three 20's as 1202020.
8. 91st birthday: Aldrin's 91st birthday, expressed as 1202021, is a true palindrome day! Also, Aldrin landed on the Moon 2 x 91 days after his 38th birthday, where 38 equals two times reverse of 91.
9. 92nd birthday: In 2022, Aldrin will turn 92, where the squares of the digits of 92 add up to 85, the reverse of which is 58, coinciding with the sum of the numbers assigned to "Aldrin." Also, twice the reverse of 92 (which is 29) yields 58.
10. 93rd birthday: 93 will also be a special age for Aldrin not only because it coincides with the middle two digits of his birth year, 1930, but also because the reverse of 93 is 39, his age when he landed on the Moon. In addition, the square of the reverse of the sum of the squares of 721 (his historic Moon landing day, July 21) is 2025.
11. 94th birthday: The reverse of 94 is 49, which equals 19 plus 30, where 19 and 30 side by side make 1930, Aldrin's birth year.
12. 95th birthday: Aldrin will turn 95 in 2025, where the square of the product of the digits of 95 equals 2025. Also, the square of the reverse of the sum of the squares of the digits of 721 (July 21) yields 2025.
13. 96th birthday: In 2026, Aldrin turns 96, where 96 coincide with the middle two digits of the historic year, 1969, when Aldrin landed on the Moon. (Note that the reverse of the rightmost two digits of 1969 is also 96.) Also, the prime factors of 721 (July 21) differ by 96. In addition, note that $96 = 2^5 \times 3$, where swapping the places of digits 2 and 5 result in $5^2 \times 3 = 75$, the sum of the numbers assigned to the letters of "Buzz."
14. 97th birthday: Aldrin will turn 97 in 2027. Interestingly enough, the sum of the rightmost two digits of 2027 ($2 + 7 = 9$) and its rightmost digit (7) put side by side yield 97.
15. 98th birthday: 98 is twice 49, where 49 equals 19 plus 30, where 19 and 30 put side by side make Aldrin's birth year, 1930.
16. 99th birthday: 99 will be Aldrin's last two-digit age. It is also a palindrome age. Also, the sum of the digits of 99 and its reverse add up to 99. In addition, the product of the digits of 99 and its reverse add up to 99. Isn't this something? Also, square of 99 is 9801, which when split as 98 and 01, these two numbers add up to 99 too!
17. 100th birthday: If Aldrin's centennial birthday written as 1202030 is split as 1, 20, 20 and 30, one-one hundredth of the product of these four numbers yield 120, that is, Aldrin's birth date, January 20!

Lastly, if Aldrin's birth date 1201930 is split as 120 and 1930, $1 + 2 + 0 = 3$ and $1 + 9 + 3 + 0 = 13$, and 3 times 13 yield 39, his age when he stepped on the Moon.

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[1] Buzz Aldrin, Wikipedia

http://en.wikipedia.org/wiki/Buzz_Aldrin