

Happy 75th Birthday, Joan Báez!

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Joan Chandos Báez, born January 9, 1941, is an American folk singer, songwriter, musician, and activist whose contemporary folk music often includes songs of protests or social justice [1]. This Saturday, January 9, 2016 marks Báez's 75th birthday and I constructed the following numerical brainteasers as a birthday gift for her.

1. If numbers 1 to 26 are assigned to the letters of the English alphabet, A as 1, B as 2, C as 3, etc., the numbers assigned to the letters of *Joan* and *Báez* sum up to 40 and 34, respectively, and 40 plus 34 is 74, which coincides with Báez's current age.
2. Báez's 75th birthday will be special not only because 75 years correspond to three quarters of a century but also because the sum of the squares of the digits of 75 equal 74 (*Joan Báez*).
3. If Báez's 75th birthday, expressed as 01-09-2016, is split into 01, 09, 20, and 16 the sum of these four numbers is 46 and interestingly enough, the reverse of 46, namely 64, coincides with sum of the numbers assigned to the letters of Báez's middle name, *Chandos*. Also, three times 46 equals 138, which is the sum of the numbers assigned to the letters of *Joan Chandos Báez*.
4. Báez's 76th birthday, expressed as 1-9-2017, or simply as 192017, will be special too because if split into 19, 20, and 17, 19 times 4 is 76 and twice the sum of 20 and 17 yields 74 (*Joan Báez*).
5. Báez's 77th birthday in 2018 will also be special because 1-09-2018 written as 1092018 is divisible by 74 (*Joan Báez*).
6. Báez's 78th birthday in 2019 will be special too since the prime factors of the difference of the prime factors of 2019 (3 and 673) add up to 74 (*Joan Báez*). Moreover, if 2019 is split in the middle, as 20 and 19, twice the sum of these is 78.
7. Báez's 79th birthday in 2020 will also be special because half of 2020 equals 109 (January 9) plus its reverse, namely 901. Additionally, 79 equals 19 + 19 + 41 where these three numbers put side by side yield 191941, representing Báez's birth date, 1-9-1941 (January 9, 1941).
8. The digits of 191941 (January 9, 1941) add up to 25 and their product equals 324, both square numbers.

9. Báez's 84th birthday in square year 2025 will be a perfect square date since 1-09-2025 expressed as 1092025 equals the square of 1045. Báez's 84th birthday can also be written as 1-9-2025, or simply as 192025. If 192025 is split into 19, 20, and 25 the sum of these three numbers yield 64 (*Chandos*), another perfect square.
10. Báez's 100th birthday in 2041 will also be special since 100 equals 10 plus 90 where the reverses of these two numbers, namely 01 and 09, put side by side yield 01-09, Báez's birth date, January 9.

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[1] Joan Báez, Wikipedia

https://en.wikipedia.org/wiki/Joan_Baez