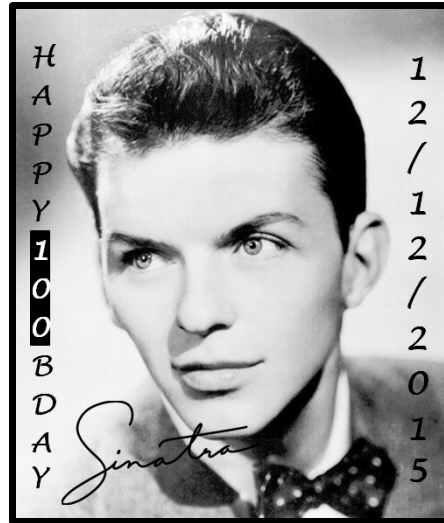**In Search of the Number 12 on Frank Sinatra's Centennial Birthday**

Aziz Inan, Electrical Engineering
University of Portland, Portland, Oregon
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Francis Albert "Frank" Sinatra, born December 12, 1915 and died May 14, 1998 at age 82, was an American singer, actor, and producer. He was one of the most popular and influential musicians of the 20th century [1]. This Saturday, December 12, 2015 marks Sinatra's 100th birthday, which I wish to properly acknowledge and celebrate. Interestingly enough both the month and the day of Sinatra's birth is 12. Consequently, this observation inspired my curiosity to look for the occurrence of the number 12 in Sinatra's life. As a result of my research I constructed the following 12-item list, denoting the presence of 12 in other aspects of Sinatra's life and to serve as a celebration of his 100th birthday.

1. Sinatra's name *Frank Sinatra* consists of 12 letters.
2. Prime factors of 12 are 2 and 3, which are the 1st and 2nd prime numbers. Notably 1 and 2 put side by side make 12!
3. 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 Sinatra's name *Frank* add up to 50. The prime multipliers of 50, namely 2 x 5 x 5, sum up to 12.
4. The numbers assigned to the letters of *Frank* and *Sinatra* sum up to 50 and 82, respectively, and 50 plus 82 is 132, which equals 12 squared minus 12.
5. The difference of 50, derived from *Frank* and 82, from *Sinatra*, equals 32, which can be written as 4 x 8 where 4 and 8 add up to 12. Also, the digits of 32 consist of the 2nd and the 1st prime numbers where, again, 1 and 2 side by side produce 12.
6. The sum of the reverses of 50 (*Frank*) and 82 (*Sinatra*), written 05 + 28, equals 33, which is 12 plus its reverse, 21.
7. The prime factors of 82 (*Sinatra*) are 2 and 41, which are the 1st and 13th prime numbers where 1 and 13 differ by 12. In addition, the difference of the reverses of primes 2 and 41 is 14 − 2, which equals 12. Moreover, the difference of the squares of the digits of 82 equals 5 multiplied 12.
8. The product of each digit of Sinatra's birth date, 12-12-1915, is 180, which also equals 15 times 12. Furthermore, Sinatra was born on the 346th day of 1915 and the product of the digits of 346 equals half of 12 times 12.

9. If Sinatra's birth year, 1915, is split in the middle, as 19 and 15, the sum of these is 34. The product of the digits of 34 equal 12. Further, if 1915 is split into its odd- and even-numbered digits, specifically 11 and 95, these two numbers differ by 84, which is 7 times 12 and the digits of 84 add up to 12.
10. Sinatra died on the 134th day of 1998 where the product of the digits of 134 yields 12 and the product of the digits of 1998 is 12 multiplied by the quantity of the sum of 12 and twice the reverse of 12, namely 21. Moreover, the sum of each digit of 5-14-1998, the date when Sinatra died, yield 37, which is the 12th prime number.
11. Sinatra's age to date, 100, also equals 4 times 25 and these two numbers differ by the reverse of 12, namely 21. Also, if 2015, the year of Sinatra's 100th birthday, is split into 20 and 15 and added we get 35 where the prime factors of 35, 5 and 7, add up to 12.
12. If Sinatra's 100th birthday, expressed as 12-12-2015, is split into 12, 12, 20, and 15 the prime factors of the reverse of the sum of these four numbers add up to 24, twice that of 12.

I hope this dozen of brainteasers revealing number 12's hidden in Sinatra's life, although sometimes complex, are fun to read and help us remember Sinatra on his centennial birthday.

Happy 100th birthday, Frank Sinatra!

Additional note: Sinatra died at 82, which coincides with sum of the numbers assigned to the letters of his last name, *Sinatra*. Furthermore, if Sinatra's birth date 12-12-1915 is split as 12, 12, 19, and 15, these four numbers add up to 58, which coincide with the sum of the numbers assigned to the letters of his other name, *Albert*.

[1] Frank Sinatra, Wikipedia
https://en.wikipedia.org/wiki/Frank_Sinatra