Birthday Brainteasers for Jay Leno
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American late night television talk show host Jay Leno (born April 28, 1950, or simply, 4281950) turns 62 on Saturday, April 28, 2012 (4282012). As I was looking at some of the date and age numbers in Leno's life, I stumbled on some interesting fun number connections and coincidences. As a result, I decided to construct the following brainteaser gift for Leno to celebrate his upcoming birthday:

1. If Leno's birth year 1950 is split into numbers 19 and 50, twice the difference of these two numbers yields 62.
2. If numbers are assigned to the letters of the English alphabet as letter A being 1, B is 2, etc., the numbers of the letters of "Jay" and "Leno" add-up to 36 and 46 each and the sum of the letters of "Jay Leno" is 82. The square of Leno's new age 62 is 3844 where numbers 38 and 44 (which when put together side-by-side make-up number 3844) add-up to 82, that is, "Jay Leno!"
3. Leno's new age 62 minus its reverse (26) equals "Jay!"
4. Also, Leno's new age 62 along with the reverses of the sums of the letters of "Jay" and "Leno" form the arithmetic sequence 62, 63 and 64!
5. Leno's birth date 428 (April 28th) divided by its month number 4 yields 107 and interestingly enough, 107 coincides with the 28th (i.e., the day number of 428) prime number!
6. Leno's birth date April 28 (428) is equivalent to double Valentine's Day (214)!
7. The reverse of the product of the digits of 428 (April 28) equals "Leno!"
8. Switching the leftmost two digits of 428 (April 28) results in number 248 and interestingly enough, April 28th corresponds to the 248th day of each calendar year if the days of the year are counted backwards starting from the last day December 31st towards the beginning of the year. Isn't this something?
9. The reverse of 28 (Leno's birth day number) equals "Jay Leno!"
10. <u>Connection between Leno's birth year and his new age:</u> If Leno's birth year 1950 is split as 19 and 50, these two numbers add-up to 69 which equals 3 times 23 where 3 plus 23 is reverse of 62, Leno's new age!
11. The reverse of the square-root of the difference of the numbers 36 (Jay) times its reverse and 46 (Leno) times its reverse yields Leno's new age 62! Wow!
$$62 = \text{Reverse}\{\sqrt{\text{Leno} \times \text{oneL} - \text{Jay} \times \text{yaJ}}\} = \text{Reverse}\{\sqrt{46 \times 64 - 36 \times 63}\}$$
12. <u>Leno's 62nd birthday puzzle:</u> Did you know that the full-date of Leno's 62nd birthday is secretly coded in the full-date number of his 62nd birthday? How? I will show you. Okay, go ahead and split the full-date number of Leno's 62nd birthday 4282012 into two numbers 428 and 2012. Note that number 428 equals 4 times 107 and 2012 is 4 times 503. I am going to ask you to calculate two separate numbers using primes 107 and 503. First, what is twice the sum of the reverses of primes 107 and 503? (Answer: 2012!) Second, what is twice the reverse of the sum of the numbers 107 and reverse of 503? (Answer: 428!) Okay, if these two numbers (428 and 2012) are put side-by-side, what number comes out? (Answer: Leno's 62nd birthday, 4282012!) Isn't this fun?
13. <u>Leno's 63rd birthday puzzle:</u> What is special about Leno's 63rd birthday to occur next year (2013)? (Answer: The reverse of 63 equals "Jay!")
14. <u>Leno's 64th birthday puzzle:</u> What is special about Leno's 64th birthday to occur in 2014? (Answer: The reverse of 64 equals "Leno!")

15. Leno's 65th birthday puzzle: What is special about Leno's 65th birthday to occur in 2015? (Answer: 2015 is divisible by 65. Also, if 2015 is split as 20 and 15, 20 minus 15 yields 5 and 15 minus reverse of 20 equals 13, and guess what, 5 times 13 is 65!)
16. Leno's 66th birthday puzzle: Leno's 66th birthday to occur in 2016 is also special, why? Go ahead and calculate half of the product of the reverses of the numbers corresponding to "Jay" and "Leno," what comes out? (Answer: 2016!)
17. Leno's 2032 birthday puzzle: What is special about Leno's birthday number in 2032? (Answer: It will be his 82nd birthday where 82 equal "Jay Leno!")
18. The Tonight Show puzzle: The numbers assigned to the letters of "The Tonight Show" add-up to 191. What do the squares of the digits of the full-date number of Leno's birthday 4281950 add-up to? (Answer: 191!) So, doesn't this puzzle demonstrate that Leno was indeed a perfect match to host The Tonight Show? ☺
19. Leno was born in New York City and the letters of "New York" add-up to 111. Interestingly enough, 428 (April 28th) equals 4 times 107 where 4 plus 107 yields 111. Also, 824 (reverse of 428) equals 8 times 103 where 8 plus 103 also equals 111. In addition, Leno started hosting "The Tonight Show" in 1992 where 19 and 92 (which together make-up 1992) also add-up to 111.
20. Leno's birthday puzzle: If the middle two digits of the sum of 428 (April 28th) and 824 (its reverse) are switched and another 428 is added to the result, what comes out? (Answer: Leno's birth year, 1950!)

I hope these birthday brainteasers serve to make Leno's upcoming 62nd birthday a very special one. Happy 62nd birthday, Jay Leno!

Aziz S. Inan is a professor of electrical engineering teaching at University of Portland for 23 years. As a hobby, he enjoys finding interesting numerical properties associated with numbers, connections and coincidences between numbers, calendar dates, birthdays, historical dates, etc. He can be reached at 503-943-7429 or ainan@up.edu. (Note that the purpose of this article is solely recreational and for fun.)