

Washington State—Number Connections

(By Aziz S. Inan; Electrical Engineering, University of Portland, Portland, OR)
(November 11, 2010)

- Washington is declared as the 42nd state on November 11, 1889 (11-11-1889 or 11111889);
- $42 = 3 \times 14$ where $14 - 3 = 11!$;
- If one splits 1889 in the middle into numbers 18 and 89, 18 times 98 (which is reverse of 89) equals $18 \times 98 = 1764 = 42^2!$;
- The sum of the squares of the digits of year 1889 is $1^2 + 8^2 + 8^2 + 9^2 = 210$ and one-fifth of 210 equals 42!;
- Also, the sum of the cubes of the digits of 1889 is $1^3 + 8^3 + 8^3 + 9^3 = 1754$ and this number plus 10 yields $1764 = 42^2$;
- The product of the digits of 11111889 (or 1889) equals 576 which is 24^2 where 24 is reverse of 42;
- Also, if 11111889 is split in the middle into two numbers as 1111 and 1889, one-fifth of the difference of the reverses of these two numbers is $(9881 - 1111) / 5 = 1754$ and 10 plus 1754 results in $1764 = 42^2$;
- Washington was declared as the 42nd state on 11-11-1889 at 5:27p.m. where $527 = 17 \times 31$ where the sum of these two prime factors is $17 + 31 = 48$ and half of 48 is 24, which equals reverse of 42; also, $31^2 - 17^2 = 672$ which is 16 times 42; also, reverse of 527 is $725 = 5^2 \times 29$ where the difference of these two prime factors is $29 - 5 = 24$, which again equals reverse of 42;
- The letters of WASHINGTON (assuming A = 1, B = 2, ..., Z = 26) add up to $130 = 5 \times 26$ where $26 + 5 = 31$, which equals the reverse 130;
- Sum of the digits of date 11111889 is 30 and sum of its two halves is $1111 + 1889 = 3000 = 30 \times 100$ where $30 + 100 = 130!$; note also that $130 = 13 \times 10$ where the difference of the reverses of numbers 13 and 10 yields $31 - 01 = 30!$;
- It's Washington state's 121st birthday on November 11, 2010 (11-11-2010) where $121 = 11^2$, that is, 121 equals the product of the month and day numbers of Washington state's birthday; also, it's interesting for Washington state's 121st birthday to coincide with 2010 since $2010 = 2 \times 3 \times 5 \times 67$ where $2 + 3 + 5 + 67 = 77$ and the reverse of 2010 is $102 = 2 \times 3 \times 17$ where $2 + 3 + 17 = 22$, that is, both sums (77 and 22) are each divisible by 11, the square root of Washington state's birthday number this year;
- Washington state's 122nd birthday will occur next year on November 11, 2011 (11-11-2011 or 11-11-11) where reverse of 122 equals $221 = 13 \times 17$ where $13 + 17 = 30$, the sum of the digits of 11111889;
- 212 years later on November 11, 2222 (11-11-2222 or 11112222), Washington state will celebrate its 333rd birthday!;
- Washington state's 130th birthday will occur in 2019 where $2019 = 3 \times 673$ where $3 + 673 = 676 = 26^2$ where $5 \times 26 = 130!$
- The State of Washington's 11th birthday occurred in year 1900, 111th birthday in 2000, and its 1111th birthday will occur in 3000!