Happy 306th Birthday, Ben Franklin!
(Aziz S. Inan, Ph.D., Professor, Electrical Engineering, University of Portland, Portland, OR)

Benjamin Franklin (January 17, 1706-April 17, 1790) was an extraordinary person with multiple facets and interests and his contributions to the wellbeing of human society are myriad. In the words of his biographer Carl Van Doren, Franklin was a "harmonious human multitude."

In addition to his crucial role in the American Revolution, Franklin was also very active, influential and proficient during the Enlightenment period both in America and Europe. His investigations and achievements spanned many fields of study including literature, printing, business, entrepreneurship, science, engineering, technology, politics, philosophy, environment, arts, and public service. His inventions include swim fins, the rocking chair, bifocal lenses, the Franklin stove, and the glass armonica. His legacy still lives today in every tall building around us protected day and night by his most famous invention, the lightning rod.

Tuesday, January 17th, 2012 marked Franklin's 306th birthday, numerically a very special birthday number for Franklin indeed! Why? I will explain.

First, if one assigns A = 1, B = 2,…, and Z = 26 to the letters of the English alphabet, the letters of "Benjamin Franklin" add up to 153, which I recently coined as the Franklin number, and twice the Franklin number equals 306 [1]! Isn't this something?

Second, 306 = 17 x 17 + 17, where 17 is a number that pops up repeatedly in Franklin's biography. For example, he was born on the 17th of January, died on 17th of April, his birth day was Sunday which is day 1 of each week and death day was Saturday (day 7) and Sunday-Saturday numbers put side-by-side yield 17. Since he lived during the eighteenth century, all the years in his lifetime started with the number 17. He was the 15th of his parents' 17 children and reverse of 15 which is 51 equals three times 17. He moved from Boston to Philadelphia at age 17. The digits of his death year add up to 17 and many more [2]. Also, note that if Franklin's death year 1790 is split as 17 and 90, amazingly 17 times reverse of 90 yields 153, the Franklin number!

If Franklin's birthday number 306 is split as 30 and 6, the difference of the squares of these two numbers yields 864, half of which is 432, where reverse of 432 is 234 which is twice 117, Franklin's birth date (January 17th)!

In addition, all the divisors of the Franklin number 153 (which are 1, 3, 9, 17, 51 and 153) add up to 234, that is, twice 117! Fascinating!

Also note that the reverse of the Franklin number is 351, which equals three times 117! Wow! In addition, if 153 is split as 15 and 3, sum of the squares of these two numbers yields 234 = 2 x 117! It's like magic, isn't it?

If 351 (which is 153 reverse) is split as 3 and 51, 3 x 51 = 153! In addition, if 351 is split as 35 and 1, the difference of the squares of these two numbers results in eight times 153 which is four times 306! Amazing!

Also, the reverse of the sum of the squares of the digits of 117 yields 15 which is 1 x 5 x 3, that is, the product of the digits of the Franklin number! Unbelievable!

I hope these fun numerical coincidences related to Franklin's birthday help serve as a vehicle to attract more attention to his life and achievements. Happy 306th Birthday, Ben Franklin, and thanks for continuing to serve as a role model for generations to come!

References:
[1] A. S. Inan, "The Franklin Number and Other Numerical Oddities in Ben Franklin's Life," *Franklin Gazette*, Volume 21, Number 3, Fall 2011, p. 9.
[2] A. S. Inan, "More 17's in Ben Franklin's Life," *Franklin Gazette*, Volume 21, Number 2, Summer 2011, pp. 7-8.