

# More 17's in Ben Franklin's Life

By Aziz S. Inan, Ph.D., Professor, Electrical Engineering, University of Portland, Portland, Oregon

The number 17 pops up repeatedly in Benjamin Franklin's biography. For example, he was born on Sunday, January 17, 1706 (1-17-1706, or simply, 1171706) and died on Saturday, April 17, 1790 (4171790). Since Franklin lived during the 18th century, all years that fall in his lifespan start with the number 17 as 17AB. Franklin's parents had 17 children. Also, Franklin moved from Boston to Philadelphia at age 17. These are the well-known 17's that appear in his life history. Are there any other number 17's "hiding" in Franklin's life? You bet there are. Here are more examples.

First of all, since Franklin was born on Sunday which is considered to be day 1 of each week and died on Saturday which is day 7, Sunday-Saturday numbers put side-by-side yield number 17.

Second, Franklin was the 15th of his parents' 17 children and interestingly enough, the reverse of 15, which is 51, equals three times 17.

Third, the difference between the reverses of Franklin's birth and death years is 6071 - 0971 = 5100 which is 300 times 17, where astonishingly 300 is the difference of 417 (April 17) and 117 (January 17).

Fourth, the difference of the reverses of numbers 300 and 17 yields 71 - 3 = 68 which is four times 17.

Fifth, the squares of the digits of number 117 (January 17) add up to 51 (which is 3 times 17).

Sixth, the reverse of number 117 is 711 which equal  $3 \times 3 \times 79$  where the sum of these three numbers yield  $85 = 5 \times 17$ . Note that Franklin died during the 85th year of his life.

Seventh, 417 (April 17) is 3 times 139 where the difference of these two numbers is  $136 = 8 \times 17$ .

Eighth, the reverse of 417 is  $714 = 42 \times 17$ .

Ninth, the digits of Franklin's death year 1790 add up to 17. (Franklin had nine other years in his life with digits adding up to 17.) Also, the sum of the squares of the digits of 4171790 is 197, where again,  $1 + 9 + 7 = 17$ .

Franklin had five years divisible by 17 in his lifetime: 1717, 1734, 1751, 1768, and 1785. Only year 1775 in his life was divisible by 71 which is the reverse of 17.

Assigning A=1, B=2,..., and Z=26 to the letters of the English alphabet, the letters of "Benjamin" and "Franklin" each add up to 68 (which is  $4 \times 17$ ) and 85 ( $5 \times 17$ ) and surprisingly enough, their difference yield is 17! The letters of Franklin's full name "Benjamin Franklin" sum up to 153 ( $9 \times 17$ ) where the product of the digits of 153 is 15 (15th child!).

The "Franklin number" 153 can be obtained from Franklin's death year 1790

by splitting 1790 in the middle into 17 and 90 and then multiplying reverse of 90 (which is 09) with 17! As an aside, there are two fascinating connections between Franklin's birth and death years. First is a geometric one: by rotating the rightmost two digits of 1706 as a whole by 180 degrees around its central axis that is perpendicular to the plane of the paper, year 1706 can be transformed into 1790! Second: five times the reverse of half of 1706 (which is 853) amazingly yields 1790!

Also, if one splits the Franklin number 153 into numbers 1 and 53,  $1 + 53 = 54$  where 54 equals the difference between 17

*Continued on p. 8*

15th of 17 children, Reverse {15} = 17 x 3!

BENJAMIN = 4 x 17!

FRANKLIN = BOSTON

Rotating {06} in 1706 by 180 degrees yields 1790!

BOSTON + 17 = 17 x 06!

306th BIRTHDAY IN 2012... 306 = 2 x 153!

Sunday - Saturday form 17

Reverse {1706 ÷ 2} = 1790 ÷ 5!

BENJAMIN + FRANKLIN = 153 = 17 x 06!

1 + 7 + 9 + 0 = 17!

160 x 09!

171 + 211 = 153!

6071 - 0971 = 17 x 3!

1 x 1 x 7 = 17 x 3!

1 x 5 x 3 = 15!

2<sup>3</sup> x 9 = 18

5<sup>3</sup> x 3<sup>3</sup> = 153!

45° 45°

**The Franklin Number, 153!**

I moved from Boston to Philadelphia at age 17!

Aziz Inan

More 17 Continued

and its reverse, 71. In addition, if one splits 153 as 15 and 3, the reverse of 15 divided with 3 also yields 17. Also, as an aside, 153 is a very special number because the sum of third powers of its digits give back 153!

The product of the nonzero digits of Franklin's death date 4171790 equals 1764 = 42 x 42 where 42 + 42 = 84, his death age. Note that 1764, when he turned 58, was the only perfect square year that occurred in Franklin's lifetime, and 58 reverse is 85 which contains five 17's.

Franklin also had a perfect cube year in his life, 1728, which equals 12 x 12 x 12. If 1728 is split into 17 and 28, the sum of the reverses of these two numbers yields 153, the Franklin number! Also, 17 and 28 add up to 45, the reverse of which is 54 = 71 - 17.

If Franklin's death age 84 is split as 4 and 8, 4<sup>8</sup> plus 8<sup>4</sup> yields 17 x 8<sup>4</sup>. Also, 84 equal 4 x 21 where 4 and 21 differ by 17. Franklin's ages from 1 to 84 add up to 3570 which equals 210 x 17. Also, 84 plus 17 yields 101 which correspond to the sum of the letters of city of "Philadelphia"!

The letters of Franklin's birth city, "Boston" add up to 85 (5 x 17)!

In 1723 at age 17, Franklin left Boston and moved to Philadelphia; note that if number 1723 is split in the middle into numbers 17 and 23, 17 x 17 + 23 x 23 = 818 where 8 + 1 + 8 = 17.

The letters of "Pennsylvania Gazette" owned and published by Franklin add up to 269 where 2 + 6 + 9 = 17!

Franklin had only one palindrome year in his life which was year 1771 which consists of numbers 17 and its reverse 71 put together side by side.

Franklin's full birthday in year 1776 (when the Declaration of Independence was signed by the Founding Fathers) is also divisible by 17: 1171776 = 2 x 2 x 2 x 2 x 2 x 2 x 3 x 17 x 359; in addition, the sum of these numbers equals 391 = 17 x 23. Notice that numbers 17 and 23 put side-by-side represents the year when Franklin turned 17. Franklin had four more birthdays in his life divisible by 17 which occurred in 1708, 1725, 1742 and 1759.

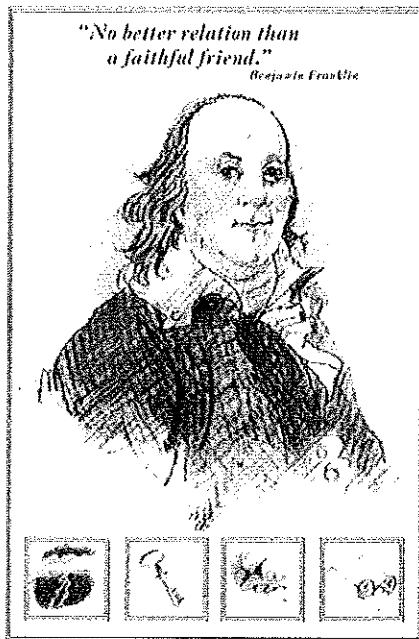
Note that this year (2011) April 17 was the 221st anniversary of Franklin's death where 221 = 13 x 17 and next year January 17 will be Franklin's 306th birthday where 306 = 17 x 18! Interestingly enough, 221 equals the sum of the numbers corresponding to the letters of the phrase "Declaration of Independence". In addition, 306 is twice the Franklin number 153 so Franklin's next birthday number is indeed a special one!

Amazingly, 2011 which coincides with Franklin's 305th birthday also happens to be the 305th prime number!

I'm sure these are not the only 17's in Franklin's life and there are many more. And now it is your turn to find other hidden 17's in Franklin's life!

Canary Island Continued

Perhaps news of Franklin's letter made its way back to the Cologan family, for in the early 1780s a friendship developed between a branch of the family that was spending time in France and the American minister to the French court. On June 12, 1781, a Mr. and Mrs. Cologan accepted an invitation to dine with Franklin. The couple was likely John and Anne-Rose Cologan, the brother and sister-in-law of Tomás Cologan. John Cologan had been educated in France and met his bride there before moving to London, where a branch of the family wine exporting business was established. The couple seems to have spent a good deal of time in Paris, where they met Franklin, and the surviving correspondence suggests a close relationship. Mrs. Cologan asked in one note that Franklin write a letter of recommendation for a merchant who was about to leave London with a cargo that he planned to trade for wines at Tenerife. The wines were destined for Franklin's home city of Philadelphia and other American ports. This may have been part of her husband's scheme to export canary wine to the United States. On May 11, 1783, Mrs. Cologan wrote to Franklin that she was terribly sorry not to have been able to breakfast with him. She loves him with all her heart, and begs him to accept some bottles of Canary wine from the family vineyard. Some of the bottles are made from vidonia grapes and the rest from malvasia. She hopes that Franklin will find them to his taste.



## "No better relation than a faithful friend."

—Benjamin Franklin

Customized card for a cause! Thinking of someone special, need to send out a thank-you note, want to acknowledge or touch base with a colleague? Why not send a note card that supports a good cause?

The Friends of Franklin, Inc. are selling a 5 x 7" custom graphic greeting card printed on all natural colored card stock with matching envelope. The inside is blank for personal notes. All profit from the sale of these cards supports the work and daily operations of The Friends of Franklin, Inc.

The Friends of Franklin would like to acknowledge and offer our sincere thanks to President Roy Goodman's wife, Sherry Bufano, who donated her design talent to provide the customized artwork for the card graphic.

Name:	_____		
Shipping Address:	_____		
Telephone:	_____		
Email:	_____		
<input type="checkbox"/> 6 cards for \$15	<input type="checkbox"/> 12 cards for \$25	<input type="checkbox"/> 25 cards for \$45	Total Enclosed _____
Payment by check or money order. \$2.00 shipping & handling. The Friends of Franklin, Inc., PO Box 40048, Philadelphia, PA 19106			