

## A FIBONACCI-PRIME NUMBER RELATION

B.B. SHARPE

State University of New York at Buffalo

Fibonacci numbers may be related to prime numbers as follows:

Conjecture.

1.  $F_i + F_j$  will be a prime number for at least one value of  $i$ , provided  $i + j$  is a prime number.
2.  $F_i - F_j$  will be a prime number for at least one value of  $i$ , provided  $i + j$  is prime and greater than 3 ( $i > j$ ). An initial verification:

$i+j$	$F_i + F_j$	$F_i - F_j$
2	$F_1 + F_1 = 2$	
3	$F_2 + F_1 = 2$	
5	$F_3 + F_2 = 3$	$F_4 - F_1 = 2$
7	$F_4 + F_3 = 5$	$F_6 - F_1 = 7$
11	$F_6 + F_5 = 13$	$F_6 - F_5 = 3$
13	$F_9 + F_4 = 37$	$F_7 - F_6 = 5$
17	$F_{11} + F_6 = 97$	$F_9 - F_8 = 13$
19	$F_{10} + F_9 = 89$	$F_{12} - F_7 = 131$
23	$F_{12} + F_{11} = 233$	$F_{18} - F_5 = 2579$
29	$F_{17} + F_{12} = 1741$	$F_{17} - F_{12} = 1453$
31	$F_{16} + F_{15} = 1597$	$F_{18} - F_{13} = 2351$
37	$F_{24} + F_{13} = 46601$	$F_{28} - F_9 = 317877$
41	$F_{30} + F_{11} = 832129$	$F_{24} - F_{17} = 44771$
43	$F_{24} + F_{19} = 50549$	$F_{24} - F_{19} = 42187$
47	$F_{27} + F_{20} = 203183$	$F_{27} - F_{20} = 189653$
53	$F_{29} + F_{24} = 560597$	

No further verification is possible using Lehmer's Factor Table to 10,000,000.

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