



Solution
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a) The Fibonacci series of squares are the value of the square of each term of the series, thus:

1, 1, 4, 9, 25, 64, 169, 441, 1156, 3025, 7921, 20736; 54289, 142129, 372100, 974169, 2550409, ...

b) Here the ratio of terms is the square of the Golden Proportion, 2.618...

c) If we now take the SDQ of each term we get the following series of SDQ Fibonacci squares:

1, 1, 4, 9, 7, 1, 7, 9, 4, 1, 1, 9; 1, 1, 4, 9, 7, 1, 7, 9, 4, 1, 1, 9

A quicker equivalent method of getting the final SDQ of the square Fibonacci series is to take the SDQ of each term, square this SDQ, and then perform the SDQ again. Using SDQ of the original series, this series becomes:

1, 1, 2, 3, 5, 8, 4, 3, 7, 1, 8, 9, 8, 8, 7, 6, 4, 1, 5, 6, 2, 8, 1, 9; 1, 1, 2, ...

Now, square each term, and we arrive at the following: 1, 1, 4, 9, 7, 1, 7, 9, 4, 1, 1, 9; 1, 1, 4, 9, 7,

d) Yes, the Fibonacci squares are a 12-term repeating series in the SDQ.

e) 1, 1, 4, 9, 7, 1, 7, 9, 4, 1, 1, 9

f) The next feature noticeable is that this series is comprised of only the four digits: 1, 4, 7, and 9.