In the debating club 373.3
Continuation of 373.2

Numeric check by DScalc
n=5(1)10000, equ. (3.2/3) → 1227 primes
7/6 co. eggs
→ 0.57/0.49%
n=5(1)100000, equ. (3.2/3) → 9590 primes
25/22 co. eggs
→ 0.26/0.23%
n=5(1)200000, equ. (3.2) → 17982 primes
38 co. eggs
→ 0.21%
n=5(1)300000, equ. (3.2) → 25995 primes
49 co. eggs
→ 0.19%
The co. egg percentage decreases with increasing n !

„Cockoo's eggs" nonprimes sequence = Lucas pseudoprimes [9,10,11]
<705, 2465, 2737, 3745, 4181, 5777, 6721, 10877, 13201, 15251, 24465, 29281, 34561, 35785, 51841, 54705, 64079, 67861, 68251, 75077, 80189, 90061, 96049, 97921, 100065, 100127, 105281, 113573, 118441, 146611, 161027, 162133, 163081, 179697, 186961, 194833, 197209, …>

Substitute in the equ.s

$(\mathrm{int}(\Phi^n) - 1) \bmod n = 0 \iff$ n is prime

n – odd nat. number, n≥ 5

$\Phi = \frac{1}{2}\left(\sqrt{5} + 1\right)$ [3,4] (A)

and

$(\mathrm{int}(\Phi^n) - 1) \bmod 2n = 0 \iff$ n is prime

n – odd nat. number, n≥ 5

$\Phi = \frac{1}{2}\left(\sqrt{5} + 1\right)$ [3,4] (B)

Φ by $\frac{\mathrm{fib}(m+1)}{\mathrm{fib}(m)}$; $m \in \mathbb{N}$ [8] , (C)

see also Unit 30.1 ,

and discuss the results of Pr and c.e.

Check especially m=n.

DScalc → equ. (A/B,C) generates

for m=	and n=5(2)	Pr	c.e.
111	1000	64/50	0
211	1000	89/52	2/1
2011	1000	166	1/0
2011	10000	737/408	2/0
7191	10000	915	7/6
10191	10000	1227	7/6
20191	100000	2474/2281	10/9
27191	100000	4246	12/10
30000	100000	9586	25

References

[3] Weisstein, Eric W. "Golden Ratio." From *MathWorld*--A Wolfram Web Resource. http://mathworld.wolfram.com/GoldenRatio.html

[4] https://en.wikipedia.org/wiki/Golden_ratio

[8] Chandra, Pravin and Weisstein, Eric W. "Fibonacci Number." From *MathWorld*--A Wolfram Web Resource. http://mathworld.wolfram.com/FibonacciNumber.html
[9] https://en.wikipedia.org/wiki/Lucas_pseudoprime
[10] Weisstein, Eric W. "Lucas Pseudoprime." From *MathWorld*--A Wolfram Web Resource. http://mathworld.wolfram.com/LucasPseudoprime.html
[11] https://oeis.org/search?q=Lucas+pseudoprime&language=german&go=Suche

Extension

Find (a,b,c,d) ; $c,d \in \mathbb{Z}$

so that

$(int(a*b^{n+c})+d) \bmod n = 0 \iff$ n is prime ; $n \in \mathbb{N}$.

Candidate $(1,\Phi,0,-1)$

Visitor, it's your turn to find more.

To be continued.

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