$n = 7849$

$\sqrt{m} = 88,594\ldots$

$b_{-1} = 1$

$b_0 = a_0 = 88$

$x_0 = \sqrt{m} - a_0 = 0,594\ldots$

$b_0^2 \bmod n = b_0^2 - m = -105 = (-1) \times 3 \times 5 \times 7$

$a_1 = \left[\frac{1}{x_0}\right] = 1$

$x_1 = \frac{1}{x_0} - a_1 = 1,681\ldots - 1 = 0,681\ldots$

$b_1 = a_1 b_0 + b_{-1} = 1 \times 88 + 1 = 89$

$b_1^2 \bmod m = 72 = 2^3 \times 3^2$

$a_2 = \left[\frac{1}{x_1}\right] = 1$

$x_2 = \frac{1}{x_1} - a_2 = 1,466\ldots - 1 = 0,466\ldots$

$b_2 = a_2 b_1 + b_0 = 1 \times 89 + 88 = 177$

$b_2^2 \bmod m = -67 = (-1) \times 67$

...

I wrote a python program that generated 21 values. This is the code:

```python
import math

table = []

n = 7849
i = 0
b = [1,math.floor(math.sqrt(n))]
a = math.floor(math.sqrt(n))
x = math.sqrt(n) - a
bmn = b[1]*b[1] - n

print(i)
print(str(a) + " " + str(x) + " " + str(b[1]) + " " + str(bmn))
print("")

for i in range(20):
    a = math.floor(float(1)/x)
    x = float(1)/x - a
    lb,llb = b[1],b[0]
    b[1] = (a * lb + llb) % n
    b[0] = lb
    bmn = ( b[1]*b[1] ) % n
    if bmn > n/2:
        bmn = bmn - n
    print(i+1)
    print(str(a) + " " + str(x) + " " + str(b[1]) + " " + str(bmn))
    print("")
```

i	0	1	2	3	4	5	6	7	8	9	10
ai	88	1	1	2	6	1	58	5	21	1	18
bi	88	89	177	443	2835	3278	4583	2646	5206	3	5260
b_i^2 mod n	-105	72	-67	24	-151	3	-35	8	-161	9	-125
	$(-1) * 3 * 5 * 7$	$2^3 * 3^2$	$(-1) * 67$	$2^3 * 3$	$(-1) * 151$	3	$(-1) * 5 * 7$	2**3	$(-1) * 7 * 23$	3^2	$(-1) * 5^3$

i	11	12	13	14	15	16	17	18	19	20
ai	1	1	1	4	2	1	3	2	20	2
bi	5263	2674	88	3026	6140	1317	2242	5801	527	6855
b_i^2 mod n	48	-163	-105	-3107	853	-140	3204	2938	3014	-938
	$2^4 * 3$	$(-1) * 163$	$(-1) * 3 * 5 * 7$	$(-1) * 13 * 239$	853	$(-1) * 2^2 * 5 * 7$	$2^2 * 3^2 * 89$	$2 * 13 * 113$	$2 * 11 * 137$	$(-1) * 2 * 7 * 67$

We choose $B = \{-1, 2, 3, 5, 7\}$. Then $b_i^2 \bmod m$ is a B-number for $i = 0, 1, 3, 6, 5$ ($7, 9, 10, 11, 13, 16$ if we generated more than 6 values)

$v_0 = (1,0,1,1,1)$ $\quad$ $v_5 = (0,0,1,0,0)$

$v_1 = (0,3,2,0,0)$ $\quad$ $v_6 = (1,0,0,1,1)$

$v_3 = (0,3,1,0,0)$

Then $v_0 + v_1 + v_3 + v_6 = 0 \pmod 2$. Hence

$b = b_0 \cdot b_1 \cdot b_3 \cdot b_6 = 88 \cdot 89 \cdot 443 \cdot 4583 = 5329 \pmod m$

$c = 2^3 \cdot 3^2 \cdot 5 \cdot 7 = 2520$ #

$-c = 5329 \pmod m$

$b = -c \pmod m$, so we generate more values (from 6 to 20)

We choose $B=\{-1,2,5,7,67\}$. Then $b_i^2 \bmod m$ is a B-number for $i=2,6,7,10,16,20$

$v_2=(1,0,0,0,1)$ $\quad$ $v_{10}=(1,0,3,0,0)$

$v_6=(1,0,1,1,0)$ $\quad$ $v_{16}=(1,2,1,1,0)$

$v_7=(0,3,0,0,0)$ $\quad$ $v_{20}=(1,1,0,1,1)$

Then $v_2+v_7+v_{10}+v_{16}+v_{20}=0 \pmod 2$. Hence

$b=b_2\cdot b_7\cdot b_{10}\cdot b_{16}\cdot b_{20}=2785 \pmod m$

$c=2^3\cdot 5^2\cdot 7\cdot 67=7461$

$-c=388 \pmod m$

$b\not\equiv \pm c \pmod m$, so a factor of m is $(2785+7461,\ 7849)=47$.

Thus, $m=47\cdot 167$