1a.

My n is 502 and t is 125.

1b.

1c.

2.

Answer to the ultimate question of life, the universe, and everything is not 42. it is 502

Congrats!

4.

GCD is: 1

B % GCD is: 0

Solution 1 is: 56884393062303769019751445983612369117060043083722821988604

//

GCD is: 3

B % GCD is: 2

no solution.

//

GCD is: 3

Solution 1 is: 9609279374756105288427021898499890361717105145551739027963

Solution 2 is: 110042907140942997509799652683766709621865315673440026493694

Solution 3 is: 210476534907129889731172283469033528882013526201328313959425

4a.

GCD of a and n is 1. GCD also divides the b value, so there are 1 solution. They are given below:

Solution 1 is: 56884393062303769019751445983612369117060043083722821988604

4b.

GCD of a and n is 5. But it doesn't divide the b value, there is no solution

4c.

GCD of a and n is 3. GCD also divides the b value, so there are 3 solutions. They are given below:

Solution 1 is: 96092793747561052884270218984998903617171051455517399027963

Solution 2 is: 110042907140942997509799652683766709621865315673440026493694

Solution 3 is: 210476534907129889731172283469033528882013526201328313959425

5.

LFSR for p1(x): **************

Initial state: [1, 1, 1, 1, 1]

First period: 31

L and C(x): (5, [1, 0, 1, 0, 0, 1])

keystream: [1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1]

LFSR for p2(x): **************

Initial state: [0, 1, 0, 0, 1]

First period: 3

L and C(x): (3, [1, 0, 0, 1])

keystream: [1, 0, 0, 1]

6.

X1

L and C(x): 84 (31, [1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1])

Period is: 84

X2

L and C(x): 90 (31, [1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1])

Period is: 90

X3

L and C(x): 89 (31, [1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1])

Period is: 89