Use Pollard's ρ method with $x_0 = 2$ and $f(x) = x^2 + 1$ to determine the decomposition of the number $n = 9983$ into two factors.

Important note: All answer boxes should be filled in using the convention that those not applicable must be filled in with x.
All numbers must be filled in as positive numbers mod n.

Solution.

Iterations (results mod n):

x_1 =	5	x_2 =	26	$(\lvert x_2 - x_1\rvert, n)$ =	1
x_3 =	677	x_4 =	9095	$(\lvert x_4 - x_2\rvert, n)$ =	1
x_5 =	9871	x_6 =	2562	$(\lvert x_6 - x_3\rvert, n)$ =	1
x_7 =	5014	x_8 =	3003	$(\lvert x_8 - x_4\rvert, n)$ =	1
x_9 =	3361	x_{10} =	5549	$(\lvert x_{10} - x_5\rvert, n)$ =	1
x_{11} =	3830	x_{12} =	3874	$(\lvert x_{12} - x_6\rvert, n)$ =	1
x_{13} =	3428	x_{14} =	1194	$(\lvert x_{14} - x_7\rvert, n)$ =	1
x_{15} =	8051	x_{16} =	8966	$(\lvert x_{16} - x_8\rvert, n)$ =	67
x_{17} =	x	x_{18} =	x	$(\lvert x_{18} - x_9\rvert, n)$ =	x
x_{19} =	x	x_{20} =	x	$(\lvert x_{20} - x_{10}\rvert, n)$ =	x

Conclusion:

The obtained two factors of n are (in increasing order!) 67 and 149.