

**Short solution**

Extended Euclid:

	798	1	0
	567	0	1
1	231	1	-1
2	105	-2	3
2	21	5	-7
5	0	-27	38

$$x = 3.5 - 27.k = 15 - 27.k, y = 3.(-7) + 38.k = 38.k - 21.$$

$$x \equiv 2.(-7) \equiv -14 \equiv 24 \pmod{38}.$$