Math 255 - Spring 2022
Solving $ax + by = d$ by hand
10 points

Please note that this assignment follows the "Euclidean algorithm by hand" assignment. You are not required to turn it in to turn this one in, but you will be using the answers from the first assignment for this assignment.

For each of the following pairs, use the Euclidean algorithm to compute $d = \gcd(a, b)$, and then use back-substitution to give one integer solution to the equation $ax + by = d$. You may use a calculator to do any intermediate steps, but you must show your work "as if" you were doing the problem by hand for credit.

If you have turned in the "Euclidean algorithm by hand" assignment, you do not need to show your Euclidean algorithm work, only the back-substitution step.

1. $a = 7, b = 30$

2. $a = 101, b = 17$

3. $a = 252, b = 291$

4. $a = 845, b = 117$