

**EXTRA CREDIT #2 – MATH 2200
SPRING 2018**

DUE MONDAY, APRIL 2ND, 2018

This is worth up to 20 points to your homework/quiz score.

Suppose $a, b \in \mathbb{Z}$. We know we can write

$$ra + sb = \gcd(a, b).$$

What can you say about r, s ? In particular, find all the r and s that work.

A complete answer is not necessary to receive partial credit. You can explore some special cases. For example, you could explore $a = 7, b = 10$. Alternately, you could explore $a = 3$ while b is anything. Or you could explore $a = n$ and $b = n + 1$ (or whatever strikes your fancy).

You can get some credit just for identifying patterns, or you can more credit for proving that the patterns you identify are correct.

For full credit, please consider typing up your work on this