EXTRA CREDIT #2 – MATH 311W

SEPTEMBER 28TH, 2012

Suppose $a, b \in \mathbb{Z}$ and $n \in \mathbb{Z}_{>0}$. 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.

This is worth 6 points to your homework score, of those 4 of those are for the mathematics, 2 are for the write-up. Please consider typing up your work on this.