Theorem:

If g is the gcd of a,b, then the Euclidean Algorithm will give integers s and t so that

g= as +bt.

"Just keep dividing"

$288 = 5 \cdot 51 + 33$

$51 = 1 \cdot 33 + 18$

$33 = 1 \cdot 18 + 15$

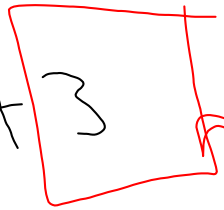
$18 = 1 \cdot 15 + 3$

$15 = 5 \cdot 3 + 0$

done

3 is gcd of 288, 51.

one line up



Find s, t so that

$$3 = 288 \cdot s + 51 \cdot t$$

After you do this using the info on the previous slide, find some <u>other</u> s and t that also work.