- We want to find $\gcd(m, n)$. Say $n < m$. Then we use the Division Algorithm to obtain
$$m = q_1 n + r_1.$$

  If $r_1 = 0$, we are done, because $n | m$ and the answer is n.
- If not, we solve
$$n = q_2 r_1 + r_2.$$

  If $r_2 = 0$, the answer is r_1. If not, keep going:
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$$r_1 = q_3 r_2 + r_3$$

  etc.
- When this algorithm terminates, the last non-zero remainder is the gcd!!!!