

$$r_0 = r_1 q_1 + r_2$$

$$0 \leq r_2 < r_1$$

$$r_1 = r_2 q_2 + r_3$$

$$0 \leq r_3 < r_2$$

$$\vdots$$

$$r_{k-2} = r_{k-1} q_{k-1} + r_k$$

$$0 \leq r_k < r_{k-1}$$

$$r_{k-1} = r_k q_k$$