

3. Let $p = 571$ and $g = 4$. Note that the order N of g in \mathbb{F}_{571} satisfies $N = 57$. We wish to compute $\log_g(407)$.

(a) [**2 points**] Compute List 1 in Shanks's algorithm.

(b) [**2 points**] Compute List 2 in Shanks's algorithm. You may stop as soon as you detect a collision with List 1.

(c) [**1 point**] Use (a) and (b) to find $\log_g(407)$.