1. Consider the game G_1 which starts with one pile of 20 counters. The rules allow a player to take $1, 3$, or 5 counters on each turn. The player who makes the last move wins. Denote this game by $N(20; 1, 3, 5)$. Do you want to move first? Explain why or why not.

2. Consider the game G_2 which starts with one pile of 20 counters. The rules allow a player to take $1, 2$, or 5 counters on each turn. Denote this game by $N(20; 1, 2, 5)$. Again, the player who makes the last move wins. Do you want to move first? Explain why or why not.

3. Consider the game G_3 which starts with one pile of 20 counters. The rules allow a player to take $1, 2$, or 6 counters on each turn. Denote this game by $N(20; 1, 2, 6)$. As usual, the player who makes the last move wins. Do you want to move first? Explain why or why not.

4. Consider the game G_4 which starts with one pile of 20 counters. The rules allow a player to take a prime number of counters on each turn. Denote this game by $N(20; \text{prime})$. As usual, the player who makes the last move wins. Do you want to move first? Explain why or why not.

5. Consider the game G_5 which starts with one pile of 200 counters. The rules allow a player to take an integer power of 2 counters on each turn. Denote this game by $N(200; 1, 2, 4, 8, 16, 32, 64, 128)$. As usual, the player who makes the last move wins. Do you want to move first? Explain why or why not.

6. Consider the game G_6 which starts with one pile of 2000 counters. The rules allow a player to take an integer power of three counters on each turn. Denote this game by $N(2000; 3^0, 3^1, 3^2, 3^3, 3^4, 3^5, 3^6)$. As usual, the player who makes the last move wins. Do you want to move first? Explain why or why not.