2.2.19 Bay Area Rapid Food sells chicken nuggets. You can buy packages of 7 or packages of 11. What is the largest integer \( n \) such that there is no way to buy exactly \( n \) nuggets? Can you generalize this?

2.2.28 (1991 Putnam) For each integer \( n \geq 0 \), let \( S(n) = n - m^2 \), where \( m \) is the greatest integer with \( m^2 \leq n \). Define a sequence \( a_k \) by \( a_0 = A \) and \( a_{k+1} = a_k + S(a_k) \) for \( k \geq 0 \). For what positive integers \( A \) is this sequence eventually constant?

2.3.25 Prove that the planed is divided into \( \frac{n^2 + n + 2}{2} \) regions by \( n \) lines in general position (no two lines parallel; no three lines meet in a point).

2.4.8 Two towns, A and B, and connected by a road. At sunrise, Pat begins biking from A to B along this road, while simultaneously Dana begins biking from B to A. Each person bikes at a constant speed, and they cross paths at noon. Pat reaches B at 5pm while Dana reaches A at 11:15 pm. When was sunrise?