Challenge questions

If you already about proofs by induction, do one of these during the class time.

We will spend the last 5-10 minutes of class doing these at the board.

1. Prove, using induction, that every positive integer at least 2 has a factorization into primes.

2. Prove, using induction, that every finite simple graph has an even number of vertices of odd degree.

3. Prove, using induction, that the nth Fibonacci number $F(n)$ is at least n, where $F(0) = F(1) = 1$ and $F(n) = F(n-1) + F(n-2)$ for $n \geq 2$.