

Lecture 15, class activity. Strong Induction.

1. Let us define the recursion

$$Q_1 = 3, \quad Q_2 = 6, \quad Q_{n+1} = Q_n + Q_{n-1}. \quad (1)$$

(a) Write out the terms Q_n for $n = 1, 2, 3, 4, 5$.

(b) Prove that Q_n is divisible by 3 for all $n \in \mathbb{N}$.

(c) For which n is Q_n divisible by 6? Can you prove this?