MAT 200, Quiz 3

June 16, 2011

Your name:_____ ID number_____

(1) Let F_n be the Fibonacci sequence: $F_1 = F_2 = 1$, $F_3 = F_1 + F_2 = 2$, $F_{n+1} = F_n + F_{n-1}$ for $n \geq 2$. Prove that $F_1^2 + \cdots + F_n^2 = F_n F_{n+1}$.

(2) Let A, B be sets. Prove that $A \cap (A \cup B) = A$. [Note: Venn diagrams are not considered a valid method of proof; however, you can use Venn diagrams to **illustrate** the proof.]