Assignment 2

1.1 Use induction to prove $F_i = \frac{\phi^i - \hat{\phi}^i}{\sqrt{5}}$; where $F_i = F_{i-2} + F_{i-1}$, and ϕ is the golden ratio $\frac{1+\sqrt{5}}{2}$.

Proof by induction is used to show that an expression (typically a recursive function) is true; in practice, it is a two step process involving a calculation and then a set of algebraic steps the expression to be proved.

By demonstrating that f_c is true for some constant c, and by demonstrating that f_{n+1} holds when using the function in terms of n