CSE 311 Quiz Section: November 1, 2012

1 Using Strong Induction

Which amounts of money can be formed using just two-dollar bills and five-dollar bills? Prove your answer using strong induction.

2 Recursive functions

Find $f(1), f(2), f(3)$, and $f(4)$ if $f(n)$ is defined recursively by $f(0) = 1$ and for $n = 0, 1, 2, ...$

a) $f(n+1) = f(n) + 2$
b) $f(n+1) = 3f(n)$
c) $f(n+1) = 2^{f(n)}$
d) $f(n+1) = f(n)^2 + f(n) + 1$

3 Recursive proof

Prove that $f_0 f_1 + f_1 f_2 + ... + f_{2n-1} f_{2n} = f_{2n}^2$ where n is a positive integer and f_n is the nth Fibonacci number.