Combinatorics HW w6-1

Student ID: Name: Score:

1. Please prove the following equation of fibonacci sequence F_i:

$$F_1 + F_3 + F_5 + \cdots + F_{2n-1} = F_{2n}$$

2. Please provide the corresponding characteristic equations for the following recurrence relation:

$$a_n = 2a_{n-1} + 4a_{n-2} - 5a_{n-3}$$

3. Solve the recurrence relation $h_n = 2h_{n-1} + 8h_{n-2}$, $n \geq 2$, $h_1 = 1$, $h_2 = 10$