

Quiz 8

ICS 6D

Fall 2014

Monday, December 8, 2014

Instructor: Sandy Irani

Student ID Number:

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Name: _____

1. Solve the following recurrence relation:

- $f_n = 9 \cdot f_{n-2}$
- $f_0 = 7$
- $f_1 = 9$

2. Let $\{f_k\}$ be a sequence corresponding to the number of ways to select a subset of k items from a set S . Give the generating function for $\{f_k\}$ for each description of S . You can assume that pieces of fruit of the same variety are identical. **Your answer should be given in closed form (i.e., no summations or "..."), and should be in the most compact form possible.**

(a) An infinite supply of apples, bundled in packages of three.

(b) Five bananas that can be selected individually, and an infinite supply of apples bundled in packages of six.

(c) 17 oranges that can be selected individually, and an infinite supply of kiwi that can be selected individually.