CS 61AS 2011

Quiz 0.3

1. (4 points) Write a predicate is-balanced? that takes in a word of ones and zeros and returns true if the number of zeros equals the number of ones. For example:

> (is-balanced? ‘100)

#f

> (is-balanced? ‘1010)

#t

Hint: Use a helper procedure.

2. (4 points) Write a procedure position that given a sentence and a word returns the spot in the

sentence that the word occurs (starting at 0) or false if the word is not found. For example:

> (position ‘recursion ‘(recursion is fun))

0

> (position ‘two ‘(one two three))

1

>(position ‘d ‘(a b c))

#f

3. (2 points) You are writing a function to compute the nth fibonacci number and have found the

recursive step:

(+ (fibonacci (- n 1)) (fibonacci (- n 2)))

Now for what values of n should you evaluate to your base case instead of the recursion?

Hint: fibonacci of a negative number does not exist.