

## COMP 212 : Functional Programming, Spring 2024

## Homework 04

Name: \_\_\_\_\_

Wes Email: \_\_\_\_\_

Question	Points	Score
1	20	
2	10	
Total:	30	

If possible, please type/write your answers on this sheet and upload a copy of the PDF to your google drive handin folder. Otherwise, please write the answers in some sort of word processor and upload a PDF. Please name the file `hw04-written.pdf`.

See the homework handout for descriptions of the problems.

### 1. Prefix sum

- (5) (a) Give a recurrence, closed-form, and big-O bound for the work of `prefixSum`.

**Solution:**

- (5) (b) State a theorem relating `prefixSumHelp` and `prefixSum`

**Solution:** For all `xs: int list` and \_\_\_\_\_,  
`prefixSumHelp(xs, _____) ≅`

- (10) (c) Give recurrences, closed-forms, and big-O bounds for the work of `prefixSumHelp` and `prefixSumFast`.

**Solution:**

2. Shuffle

- (10) (a) Give a recurrence and big-O bound for the work of `shuffle`.

**Solution:**