

CMPT 125 Quiz - October 16, 2018

Name: _____

SFU ID: _____

Q1. Describe in words the Quick Sort algorithm. You can write a pseudo code
You don't need to explain how to implement the rearrange().

ANSWER:

- Chooses a pivot.
- Arrange the elements so that all elements in the array smaller than the pivot are to the left of the pivot, and all elements greater than the pivot are to the right.
- Recursively apply Quick Sort on the subarray to the left of the pivot
- Recursively apply Quick Sort on the subarray to the right of the pivot

Q2. What is the state of the stack after these operations? What are the values of x, y, z?
Explain your answer by drawing intermediate steps.

```
s = create_stack()
stack_push(s, 1)  s = [1]
stack_push(s, 3)  s = [1, 3]
stack_push(s, 5)  s = [1, 3, 5]
x = stack_pop(s)  x = 5, s = [1, 3]
stack_push(s, 7)  s = [1, 3, 7]
y = stack_pop(s)  y = 7, s = [1, 3]
z = stack_pop(s)  z = 3, s = [1]
```