HW #4

Part1:

Critical Section Requires:

- 1. Mutual Exclusion; only one thread allowed at a time
- 2. Progress; a thread that enters must leave
- 3. Bounded Waiting; if a thread is waiting to enter, it will eventually enter the critical section.
- 4. Time Efficiency; entering and leaving critical section takes a little bit of time compared to work being preformed.

Part2: pthread compute.c

```
dereky1@odin:~/143a/hw/hw4
                                                                   ×
cript started on Wed 26 Oct 2016 11:30:47 PM PDT
 []0;dereky1@odin:~/143a/hw/hw4^G^[[?1034hdereky1@odin 23:30:48 ~/143a/hw/hw4
$ make -f Maf^H^[[Kkefile co^H^[[K^H^[[Kpthread compute^N
gcc -I. -lpthread pthread compute.c -o pthread compute 1
[]0;dereky1@odin:~/143a/hw/hw4^Gdereky1@odin 23:31:01 ~/143a/hw/hw4 ^M^M
H^H^[[C^[[1@r^[[1@u^[[1@n^[[1@ ^M
pthread compute < integers.dat
max: 100.000000°
min: 10.000000
average: 55.0000000
 []0;dereky1@odin:~/143a/hw/hw4^Gdereky1@odin 23:31:06 ~/143a/hw/hw4 ^M^M
$ python test_compute.py'
gcc -I. -lpthread pthread compute.c -o pthread compute^M
Your output should parse okay!
 []0;dereky1@odin:~/143a/hw/hw4^Gdereky1@odin 23:31:14 ~/143a/hw/hw4 ^M^M
$ exit^
exit^N
Script done on Wed 26 Oct 2016 11:31:16 PM PDT
"pthread compute report" 19L, 794C
                                                                      A11
```

Submitter: dereky1(Yang, Derek)

Part3:mutex_compute

```
dereky1@odin:~/143a/hw/hw4
                                                                    Х
Script started on Thu 27 Oct 2016 02:59:11 AM PDT
 []0;dereky1@odin:~/143a/hw/hw4^G^[[?1034hdereky1@odin 02:59:11 ~/143a/hw/hw4
$ make -f Makefile mutex compute^M
gcc -I. -lpthread mutex compute.c -o mutex compute^1
 []0;dereky1@odin:~/143a/hw/hw4^Gdereky1@odin 02:59:22 ~/143a/hw/hw4 ^M^M
H^H^[[C^[[1@r^[[1@u^[[1@n^[[1@ ^M
mutex compute < integers.dat ^M
max: 100.0000000^
min: 10.000000^1
average: 55.000000^M
[]0;dereky1@odin:~/143a/hw/hw4^Gdereky1@odin 02:59:27 ~/143a/hw/hw4 ^M^M
$ mutex compute < integers2.dat^M</pre>
max: 999.000000°
min: 0.0000000
average: 508.000000^
[]0;dereky1@odin:~/143a/hw/hw4^Gdereky1@odin 02:59:39 ~/143a/hw/hw4 ^M^M
$ exit^
exit^M
Script done on Thu 27 Oct 2016 02:59:45 AM PDT
                                                         20,46
                                                                      A11
. c
```