CSE 312
Midterm

Berke Belgin
171044065

a)
Since pthread-cond-wait is used inside critical regions (mutex locked regions) it needs to unlock mutex first to not cause a deadlock by preventing other threads to continue and waiting for a signal itself. So inside pthread-cond-wait it unlocks mutex, waits for a signal then locks it again.

b)

```
 li $t0, 0xA000
 li $t1, 0xA0A0
 li $t2, 0
mv $t3, $t0
 li $t5, 0
 li $t6, 10
loop:
   sw $t4, 0($t3)
   bgt $t4, $t2, swap
loopC:
 addi $t3, $t3, 1
 addi $t5, $t5, 1
 blt  $t5, $t6, loop
 halt
swap:
 lw $t2, $t4
 J loopc
```

c) for P1 only there is $\boxed{\text{12GB free ram}}$ $n = 12/2 = 6$

CPU u. = $1 - p^n$ where $n = 6$, $1-\left(\frac{6}{10}\right)^6 =$

for P2 only it would be

CPU ut. = $1 - p^n$ where $n=2$ $n = 12/6 = 2$

$1-\left(\frac{3}{10}\right)^2 =$

2P2s