Systems Programming and Operating Systems	**Assignment 1**
CS414, Summer 1996	**July 11, 1996; Due on July 18, 1996**

Problem 1 (30 points)
Imagine a job pool which has received jobs which need to be scheduled. Each job has the following run time and the following priority –

Process	Running Time	Priority
1	10	30
2	20	20
3	15	25
4	17	24
5	18	16

A job with a higher priority number has the higher priority.

Determine the following

1. Average turnaround time
2. Average waiting time
3. Average scheduling time

for the following policies –

i FCFS.

ii Shortest Job First.

iii Priority with **no** preemption.

Problem 2 (20 points)
Given a set of processes $P_0, P_1, \dots P_n$ arriving in a pool which can run to completion (i.e. no preemption) prove that the shortest job first scheduling has the minimum average waiting time of all possible schedules.

Problem 3 (10 points)
In the third (correct) solution of the ciritcal section problem, reproduced below –

```
flag[i] = TRUE
turn    = other
while (flag[j] && turn == j) no-op

CRITICAL SECTION
```

why does *turn* have to be set to *other* and not to *self*?