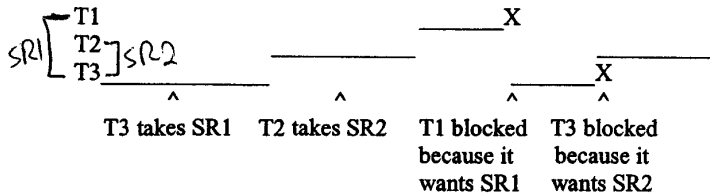# Assignment 8

Priorites for tasks T1, T2, and T3 are as follows: $P_{T3} > P_{T2} > P_{T1}$
T1 and T3 make use of shared resource 1 (SR1)
T2 and T3 make use of shared resource 2 (SR2)
Assume Round-Robin scheduling

```
     ┌─T1                        _____X
SR1 │  T2─┐
     └─T3─┘SR2 _____  _____         _____
                                  _____X
              ^          ^          ^        ^
        T3 takes SR1  T2 takes SR2  T1 blocked  T3 blocked
                                    because it  because it
                                    wants SR1   wants SR2
```

1)After T3 is blocked, what happens after T2's normal timeslot is completed?

T2 keeps running until it releases SR2 allowing T3 to run during the next available time slot

2)Over what time interval is there unbounded priority inversion in the above diagram.

~~during the full interval described in question~~ never

3)Does Priority Inheritance Protocol solve the unbounded priority inversion problem here? Why?

no, because only T2 can run anyway when the other tasks are blocked

4)If T3 also takes SR2 when it took SR1 above, explain what Priority Ceiling Protocol would do for you.

no real help, because T1 and T2 are blocked from running anyway while waiting for SR1 and SR2 to be released, so suspension of tasks solves nothing

5)In question 4, what would it make a difference if T3's priority was less than the other two tasks? Why?

again, it doesn't help particularly because T1 and T2 are still blocked till SR1 and SR2 are released. There can be no deadlock in either case.

exact no deadlock

In question 4 + 5   priority ceiling protocol
does help by
1) removes deadlock possibility
2) gives T3 highest priority to run