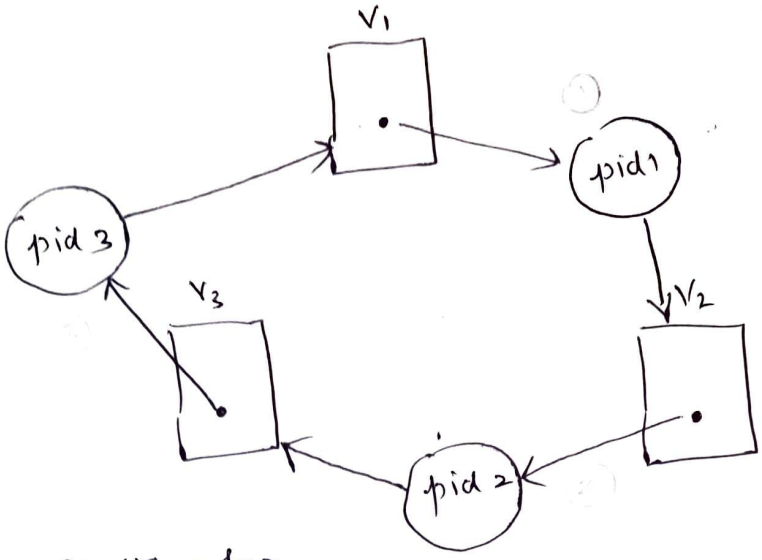
Q 3.3

Let V_1 V_2 V_3 be 3 resources

pid1 pid2 pid3 be the three threads.



Dead lock occurs when,

→ pid 1 is scheduled

→ pid1 obtains lock on V_1

→ pid1 is switched out with pid2

→ pid2 obtains the lock on V_2

→ pid 2 is switched out with pid3

→ pid3 obtains a lock on V_3

Now irrespective of the order of scheduling henceforth, each of the thread will keep waiting for another thread to release its lock thereby resulting in a dead lock.

Drawing this out in the scheduling graph, we can see a clear cycle when every thread has acquired a resource and is waiting for another resource that is already acquired.