Q1.

Consider the following snapshot of a system:

	Allocation	*Max*	*Available*
	A B C D	*A B C D*	*A B C D*
P_0	0 0 1 2	0 0 1 2	1 5 2 0
P_1	1 0 0 0	1 7 5 0	
P_2	1 3 5 4	2 3 5 6	
P_3	0 6 3 2	0 6 5 2	
P_4	0 0 1 4	0 6 5 6	

Answer the following questions using the banker's algorithm:

a. What is the content of the matrix *Need*?

b. Is the system in a safe state?

c. If a request from process P_1 arrives for (0,4,2,0), can the request be granted immediately?

Q2.

Snapshot of a system at instant T_0:

Maximum Resource Allocation (Max):

Process	A	B	C
P1	7	5	3
P2	3	2	2
P3	9	0	2

Current Resource Allocation (Allocation):

Process	A	B	C
P1	0	1	0
P2	2	0	0
P3	3	0	2

Available Resources (Available):

A	B	C
3	3	2

Identify if the system is in safe state, if so what is the safe sequence?