24. Two processes, *A* and *B*, each need three records, 1, 2, and 3, in a database. If *A* asks for them in the order 1, 2, 3, and *B* asks for them in the same order, deadlock is not possible. However, if *B* asks for them in the order 3, 2, 1, then deadlock is possible. With three resources, there are 3! or six possible combinations each process can request the resources. What fraction of all the combinations is guaranteed to be deadlock free?

22. A system has four processes and five allocatable resources. The current allocation and maximum needs are as follows:

	Allocated	*Maximum*	*Available*
Process A	1 0 2 1 1	1 1 2 1 3	0 0 x 1 1
Process B	2 0 1 1 0	2 2 2 1 0	
Process C	1 1 0 1 0	2 1 3 1 0	
Process D	1 1 1 1 0	1 1 2 2 1	

What is the smallest value of *x* for which this is a safe state?

1. 设有两个优先级相同的进程 P1，P2 如下。令信号 S1，S2 的初值为 0，已知 z=2，试问 P1，P2 并发运行结束后 x=？y=？z=？

进程 P1	进程 P2
y:=1;	x:=1;
y:=y+2;	x:=x+1;
V(S1);	P(S1);
z:=y+1;	x:=x+y;
P(S2);	V(S2);
y:=z+y;	z:=x+z;