Deadlock problem:

1. A system has two processes and three identical resources. Each process needs a maximum of two resources. Is deadlock possible? Explain your answer.
2. Consider the previous problem again, but how with *p* processes each needing a maximum of *m* resources and a total of *r* resources available. What condition must hold to make the system deadlock free?
3. 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 6 possible combinations each process can request the resources. What fraction of all the combinations are guaranteed to be deadlock free?