Assignment 6 Ryan Lebeau 104535367

1. **a**. A deadlock cannot occur within the described system since preemption exists.
   b. Inside of this system, indefinite blocking can occur. This is because a process may never gather all of the resources it needs if they are constantly preempted by a series of requests.
2. The system will not reach a deadlock for n<6. This is because three processes will use two drives each and five processes will use (2,1,1,1,1) distribution for the drives, meaning six drives will be at a deadlock state.
3. Both deadlock and starvation are possible with this problem. Say if Jane asks for the doghouse and John asks for the dog there is a deadlock here, it will be broken but just repeated next cycle regardless since they wants have not changed. In another situation, if both programs are asking for Woofer first there will be an endless starvation sequence.
4. **a**. A perfect argument for installing the deadlock avoidance is simply put that it will avoid a deadlock that would stop all production, while ensuring that all 5000 processes would still finish.
   b. On the other hand, it could be said that installing a deadlock avoidance is pointless since deadlocks rarely occur in the system.
5. **a.** 12kb *first*-20kb *best*-12kb *worst*-20kb *next*-20kb
   b. 10kb *first*-10kb *best*-10kb *worst*-18kb *next*-18kb
   c. 9kb *first*-18kb *best*-9kb *worst*-15kb *next*-9kb