Q 1.1: How many groups with ready processes can be in the system at any point in time?

At any point in time, there can be zero, one, or two groups that contain a ready process. Consider the situation where the null process is scheduled and removed from the ready list. Right after the null process begins execution, there are no ready processes. In this case, it is obvious that no groups can contain a ready process. If many processes have been created with a mixture of groups TSSCHED and SRTIME, it is possible for at least one process from each group to be in the ready state. It is also possible for all processes to be of one group, so only one group will contain a ready process.

Q 4.1: Is it important for processes to inherit ownership? Explain your answer.

Yes. If a process did not inherit ownership when created and the default user was root, the restrictions on what a user process can do would be pointless. Any user process could just create a process to do what it is not allowed to do itself. For example, a user process could kill a process with arbitrary PID *pidToKill* with the following line of code:

resume(create(kill, STK_SIZE, PRIORITY, NAME, 1, pidToKIll));

If a process did not inherit ownership, and the default user was not root and not the calling user, then the calling process would not be able to resume, kill, or suspend its processes.

Q 4.2: Which other properties are inherited by processes in XINU?

In the code for create, the created process inherits the creator process' PID as its parent process ID. The following line in create.c performs this task:

prptr->prparent = (pid32) getpid();