1. Including the initial parent process, there are 16 processes created by the program shown below.
2. A:0 B:2603 C:2603 D:2600
3. Line X: CHILD:0 CHILD:-1 CHILD:-4 CHILD:-9 CHILD:-16 Line Y: PARENT:0 PARENT:1 PARENT:2 PARENT:3 PARENT:4
4. I/O-bound programs can perform only a small amount of computation before performing I/O, which typically don’t use up their entire CPU. CPU-bound programs, on the other hand, use their entire processing without performing any blocking I/O operations. Consequently, one could make better use of the computer's resources by giving higher priority to I/O-bound programs and allow them to execute ahead of the CPU-bound programs.
5. The regressive round robin scheduler **favors the CPU-bound processes.** Because CPU-bound processes when uses its entire time quantum, they get additionally 10 milliseconds as time quantum as well as their priority gets boosted.

The regressive round robin scheduler **will not favor the I/O-bound processes**. Because these processes can be blocked for I/O before taking the full time of the quantum, and their priority will not get effected, its mean priority will be same as before.

a.

b.

P1 = 20

P2 = 85-25 =60

P3 = 90-35 = 55

P4 = 80-65 =15

P5 = 110-100 =10

P6 = 120-110 =10

c.

P1 = 0

P2 = 10+(80-55) =35

P3 = 5+10+(85-65) = 35

P4 = 5

P5 = 0

P6 = 5

d.

Idle time = 15

CPU Utilization Rate: (105/120)\*100 = 87.5%

1. a. There are 5 unique processes created.

b. There are 2 unique threads created.

1. The output from Line C is 5, and the output from Line P is 0.