1. If you buy some 4.7GB write-once DVD-R disks that can be written by the DVD+/-R/RW drive, how many disks would you need to buy to back up a full drive once?
   - 4.7GB DVD-R disk
   - 500GB Hard Drive
   - 500GB divided by 4.7GB = 106.38
   **Answer:** You would need 107 discs.

   At 30 cents per DVD-R disk, how much would a full backup cost?
   **Answer:** 107 x .30c = $32.10

   At 10 minutes per DVD-R disk, how long would a full backup take?
   **Answer:** 10 minutes x 107 DVD-R disks = 1,070 minutes

2. Would all of this data fit on the hard drive of the computer described above?
   - 3.8 million print in UB Library
   - 300+10+50+100+4+2+4= 470 bytes
   - 470 bytes x 3.8 million = 1,786,000,000 bytes of space needed
   - 1GB= 1,073,741,824
   - 1GB x 500= 536,870,912,000 Bytes
   **Answer:** Yes, it would fit.

   If so, what fraction of the disk would this fill?
   **Answer:** 1,786,000,000 divided by 536,870,912,000 = .00332668423
   or
   1786000
   536870912

3. How long would it take to get all materials published in 2012?
   - 32,217 volumes in 2012
   **Answer:** 32,217 x 10ms = 322,170ms
   or
   322.17 seconds
   It would take less than 6 minutes to find.

4. How long would it take the processor to perform 3.8 million comparisons if it can perform one comparison instruction for every two clock cycles?
   - 2.6GHZ= 2,600 mips divided by 2 (dual) = 1,300 mips x 2(cpu’s) = 2,600 mips
   - 2.6 billion comparisons per second
   - 2600 million comparisons per second
   **Answer:** In one second, 2,600 million comparisons would be make. It would take less than a second to perform 3.8 million comparisons.