

**DWITE Online Computer Programming Contest
February 2006**

Problem 2

Floppy Disk 3 1/2- inch High Density

Over the course of approximately 35 years, floppy disks have evolved from 8 inches in size down to 3 1/2 inches. Their storage capacity ranged from 80 kilobytes (KB) to 240 megabytes (MB). Most recently they are becoming extinct, with floppy disk drives being an optional accessory with the purchase of a new computer.

One of the more commonly used floppy disk, during its time, was the 3 1/2 -inch 1.44 MB capacity disk.

Your job in this problem is to put files onto the 3 1/2 -inch 1.44 MB capacity disk so that there is a minimum amount of unused space left on the floppy disk.

The input file (**DATA21.txt** for the first submission and **DATA22.txt** for the second submission) will contain five sets of data. Each set begins with the an integer, N , the number of files available to go onto the floppy disk, $1 \leq N \leq 25$. The next N lines, for each set, will contain S , an integer, the size, in kilobytes (KB), of each of the files, $1 \leq S \leq 1440$.

The output file (**OUT21.txt** for the first submission and **OUT22.txt** for the second submission) will contain five lines of data. Each line will contain the minimum amount of unused space left on the floppy disk.

<u>Sample Input</u> (3 sets of data only)	<u>Sample Output</u>
5	40
1000	35
500	28
100	
150	
400	
6	
500	
233	
650	
75	
22	
875	
4	
235	
578	
900	
599	

Sample Input Analysis

In the first set, the files with sizes 1000 and 400 use up the most storage space on the diskette.

In the second set, the files with sizes 650, 500, 233 and 22 use up the most storage space on the diskette.

In the third set, the files with sizes 599, 578 and 235 use up the most storage space.