

**DWITE Online Computer Programming Contest
November 2005**

Problem 4

Stacking Blocks

Nick, a grade three student, has been given a challenging math problem by his teacher. She wants him to build a tower of blocks, of a desired height, given different blocks of assorted heights. He can stack the blocks one on top of each other until the desired height is achieved.

The input file (**DATA41.txt** for the first submission and **DATA42.txt** for the second submission) will contain five sets of data. The first line of each set of data will contain n , an integer, $1 < n \leq 12$, which tells Nick how many different kinds of blocks he will have. The next n lines of each set of data will contain two integers each, h and m , where h is the height of the block and m is the number of blocks of this height that Nick can have. $0 < h, m \leq 100$. The last line of each set of data is an integer t , the desired height of the tower that Nick needs to build. $0 < t \leq 32000$.

The output file (**OUT41.txt** for the first submission and **OUT42.txt** for the second submission) will contain the number of blocks that Nick will require in order to build the tower of the desired height t . In each case, it will be possible for Nick to build the tower. If it is possible for Nick to build the tower in more than one way, output the way that requires the least number of blocks to build the tower.

<u>Sample Input (Only three sets of data given)</u>	<u>Sample Output</u>
3 12 4 8 6 3 3 44 5 7 4 8 3 2 9 5 1 12 4 123 2 10 5 5 10 25	4 21 3