Promoting Elves' Rights (prob8)

You'd think that elves get some time off after Christmas, but in fact, they stay busy in the spring dying Easter eggs and filling baskets. Hermione wants to help the elves with their work in order for them to enjoy more free time and the rights they deserve. Thus she has founded S.P.E.W. (Society for the Promotion of Elfish Welfare). Besides magic, she needs analytical thinking to organize the kitchen work the best way possible. The good news for her is that the Muggles have developed computers with programming capabilities.

The work she has to schedule takes a specific amount of time measured in minutes for each job that needs to be completed. The elves need to finish the maximum amount of chores within a certain deadline and of course, they want to take as little time as possible in doing so. For example they may have 20 chicken eggs that take 3 minutes an egg to dye, 10 quail eggs that take 1 minute an egg to dye, and 14 ostrich eggs, that take 10 minutes an egg to dye. If they have 20 minutes to dye eggs, they'll dye 10 quail eggs and 3 chicken eggs, leaving a minute break. Hermione will always choose the schedule that gets the most jobs done in the least amount of time.

Input

The input will contain one or more input sets. The end of input will be indicated by a line with just 0 on the line.

Each line of an input set will begin with an integer d, $0 < d < 500$, representing the maximum amount of time the elves have to work. There will then be an integer j, $0 < j < 11$, representing the number of types of jobs available to the elves. The line will then have j types of jobs the elves have to complete within the deadline, formatted as a pair of numbers (n, t). The first number, n, indicates the number of this type of job, where $0 < n < 1{,}000$. The second number, t, indicates the time it takes to complete each of this type of job in minutes, where $0 < t < 100$.

Output

The output for each input set should be the maximum number of jobs the elves can complete within the deadline and the time needed to complete these jobs. If there is more than one collection of jobs with the maximum count, the one with the shortest total time should be used.

Sample Input

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20 3 (10, 1) (5, 5) (8, 2)
50 2 (12, 4) (42, 3)
12 4 (1, 4) (3, 5) (1, 3) (1, 1)
47 4 (1, 10) (3, 5) (2, 7) (3, 3)
33 2 (100, 5) (200, 2)
0
```

Sample Output

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15 20
16 48
3 8
8 38
16 32
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