#include <stdio.h>

int knapsack(int val[], int wt[], int n, int W) {

int c[n + 1][W + 1];

int w;

for ( w = 0; w <= W; w++)

c[0][w] = 0;

int i;

for ( i = 0; i <= n; i++)

c[i][0] = 0;

for (i = 1; i <= n; i++) {

for ( w = 1; w <= W; w++) {

if (wt[i - 1] <= w) {

if (val[i - 1] + c[i - 1][w - wt[i - 1]] > c[i - 1][w])

c[i][w] = val[i - 1] + c[i - 1][w - wt[i - 1]];

else

c[i][w] = c[i - 1][w];

} else {

c[i][w] = c[i - 1][w];

}

}

}

return c[n][W];

}

int main() {

int n, W;

printf("Enter the number of items: ");

scanf("%d", &n);

int val[n], wt[n];

printf("Enter the values and weights of the items:\n");

int i;

for ( i = 0; i < n; i++) {

printf("Item %d value: ", i + 1);

scanf("%d", &val[i]);

printf("Item %d weight: ", i + 1);

scanf("%d", &wt[i]);

}

printf("Enter the maximum knapsack capacity: ");

scanf("%d", &W);

printf("Maximum value in Knapsack = %d\n", knapsack(val, wt, n, W));

return 0;

}