import java.util.ArrayList;

import java.util.Collections;

import java.util.Comparator;

import java.util.List;

import java.util.Scanner;

//

//class Item {

//

// int weight;

// int value;

//

// public Item(int weight, int value) {

// this.weight = weight;

// this.value = value;

// }

//}

public class DAA\_3 {

public static double getMaxValue(List<Item> items, int capacity) {

Collections.sort(items, new Comparator<Item>() {

@Override

public int compare(Item item1, Item item2) {

double ratio1 = (double) item1.value / item1.weight;

double ratio2 = (double) item2.value / item2.weight;

return Double.compare(ratio2, ratio1);

}

});

double totalValue = 0.0;

int currentWeight = 0;

for (Item item : items) {

if (currentWeight + item.weight <= capacity) {

// System.out.println(item.weight);

currentWeight += item.weight;

totalValue += item.value;

// System.out.println("if " + totalValue);

} else {

int remainingCapacity = capacity - currentWeight;

// System.out.println("else" + totalValue);

totalValue += (double) item.value \* remainingCapacity / item.weight;

// System.out.println("Afelse" + totalValue);

break;

}

}

return totalValue;

}

public static void main(String[] args) {

Scanner in = new Scanner(System.in);

System.out.println("Enter the number of items: ");

int n = in.nextInt();

List<Item> items = new ArrayList<>();

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

System.out.println("Enter the weight of item " + (i + 1) + ": ");

int weight = in.nextInt();

System.out.println("Enter the value of item " + (i + 1) + ": ");

int value = in.nextInt();

items.add(new Item(weight, value));

}

// items.add(new Item(10, 60));

// items.add(new Item(20, 100));

// items.add(new Item(30, 120));

System.out.println("Enter the capacity of the knapsack: ");

int capacity = in.nextInt();

double maxValue = getMaxValue(items, capacity);

System.out.println("Maximum value that can be obtained = " + maxValue);

}

}