import java.util.\*;

public class RR\_Scheduling {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("\nEnter number of processes: ");

int n = sc.nextInt();

int[] bt = new int[n];

int[] rt = new int[n];

int[] wt = new int[n];

int[] tat = new int[n];

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

System.out.print("Enter burst time for P" + (i + 1) + ": ");

bt[i] = sc.nextInt();

rt[i] = bt[i];

}

System.out.print("Enter time quantum: ");

int quantum = sc.nextInt();

int time = 0;

boolean done;

System.out.print(time);

do {

done = true;

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

if (rt[i] > 0) {

done = false;

if (rt[i] > quantum) {

System.out.print(" | P["+(i+1)+"] | ");

time += quantum;

System.out.print(time);

rt[i] -= quantum;

} else {

System.out.print(" | P["+(i+1)+"] | ");

time += rt[i];

System.out.print(time);

wt[i] = time - bt[i];

rt[i] = 0;

}

}

}

} while (!done);

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

tat[i] = bt[i] + wt[i];

}

System.out.println("\nProcess\tBurst Time\tWaiting Time\tTurnaround Time");

int totalWT = 0, totalTAT = 0;

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

System.out.println("P" + (i + 1) + "\t\t" + bt[i] + "\t\t" + wt[i] + "\t\t" + tat[i]);

totalWT += wt[i];

totalTAT += tat[i];

}

System.out.printf("\nAverage Waiting Time: %.2f\n", (double) totalWT / n);

System.out.printf("Average Turnaround Time: %.2f\n", (double) totalTAT / n);

}

}