#include <iostream>

using namespace std;

int main(){

cout<<"Round Robin Scheduling\n";

int n,avg\_wt=0,avg\_tat=0;

cout << "Enter the number of processes: ";

cin >> n;

int bt[n], wt[n], tat[n];

cout << "Enter the burst time of each process: ";

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

cin >> bt[i];

}

int quantum;

cout << "Enter the quantum: ";

cin >> quantum;

int rem\_bt[n];

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

rem\_bt[i] = bt[i];

}

int t=0;

while(true){

bool done = true;

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

if(rem\_bt[i] > 0){

done = false;

if(rem\_bt[i] > quantum){

t += quantum;

rem\_bt[i] -= quantum;

}

else{

t += rem\_bt[i];

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

rem\_bt[i] = 0;

}

}

}

if(done){

break;

}

}

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

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

}

cout << "Process\tBurst Time\tWaiting Time\tTurnaround Time\n";

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

cout << i+1 << "\t" << bt[i] << "\t\t" << wt[i] << "\t\t" << tat[i] << "\n";

}

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

avg\_wt += wt[i];

avg\_tat += tat[i];

}

cout << "Average Waiting Time: " << (float)avg\_wt/n << "\n";

cout << "Average Turnaround Time: " << (float)avg\_tat/n << "\n";

}