ACMInternationalCollegiate ProgrammingContest ASIARegional -Taejon

Problem F
Taekwondo
Input: taekwon.in

Taekwondoisthenameof a traditionalKoreanmartialartanditisturnedintoa moderninternationalsport.It isadoptedbyIOC(InternationalOlympicCommittee)asanofficialgameof2000SydneyOlympicGames.In Taekwondo,thereareindividualcompetitionsandteamcompetitions. Anindividual competitionisconducted bytwo playersand a teamcompetitionisasetofindividualcompetitions.Fortwogroupsofplayers,weare goingtomakeateamcompetitionwhere two playersforeachindividualcompetitionareselectedfromeach group.Notethatplayersineachgroupcan part icipateatmo stoneindividualcompetition. Forfaircompetition, weightsoftwo playersineach individual competitionmustbeveryclose .Givenweightsofplayersintwo groups,youaretowriteaprogramto findpairsofplayers sothatthesumoftheabsolutedifferencesofthe weightsoftwo playersineachcompetitionisminimized.

Input

Theinputfileconsistsofseveraltestcases. Thefirstlineoftheinputfilecontainsanintegerrepresentingthe numberoftestcases.Thefirstlineofeachtestcasecontainstwointegers.Thefirstinteger, n_1, isthenumber ofplayersinthefirstgroup,andthesecondint eger, n_2, isthenumberofp layersinthesecondgroup, where $1 \le n_1, n_2 \le 500$. Youhavetomake $\min\{n_1, n_2\}$pairsofplayers .Eachlineofthenext n_1 linescontain sthe weightoftheplayer int hefirstgroupandthenext n_2 linescontaintheweight sof playersinthesecondgroup . Weightsofplayersareintherangeof40.0to130.0. Youmayassumethattheprecisionofweightisonetenth.

Output

Foreachtestcase, yourprogramreports theminimumofthesumoftheabsolutedifferencesoftheweightsof two playersineachindividualcompetition intheteamcompetition .

Thefollowingsampleinputandcorrespondingcorrectoutputrepresentstwotestcases.

SampleInpu t	OutputfortheSampleInput
2 2 3 44.9 50.0 77.2 86.4 59.8 4 2 44.9 50.0 77.2 86.4 59.8 58.9	42.1 23.8