



# UIL Computer Science Competition

## Invitational B 2021

### **JUDGES PACKET - CONFIDENTIAL**

#### **I. Instructions**

1. The attached printouts of the judge test data are provided for the reference of the contest director and programming judges. Additional copies may be made if needed for this purpose.
2. This packet must remain CONFIDENTIAL. Additional copies may be made and returned to schools when other confidential contest material is returned.

#### **II. Table of Contents**

Number	Name
Problem 1	Regina
Problem 2	Arthur
Problem 3	Denis
Problem 4	Eugene
Problem 5	Hannah
Problem 6	Isamu
Problem 7	Klaudia
Problem 8	Manasa
Problem 9	Melanie
Problem 10	Paaus
Problem 11	Sharon
Problem 12	Tiffany

**Problem #1**  
**60 Points**

## 1. Regina

**Program Name: Regina.java**

**Input File: None**

**Test Output To Screen:**

```
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
BBBBBBBBBBBBBBBBBBBBBWWWWWWWWWWWWWWWWWWWWRRRRRRRRRRRRRRRRRRRRR
```

**Problem #2**  
**60 Points**

## 2. Arthur

**Program Name: Arthur.java**

**Input File: arthur.dat**

**Test Input File:**

```
6
5 12 13
16 65 63
613 612 35
37 683 685
36 323 324
1 1 1
```

**Test Output To Screen:**

```
5, 12, 13 is a Pythagorean triple.
16, 63, 65 is a Pythagorean triple.
35, 612, 613 is a Pythagorean triple.
37, 683, 685 is not a Pythagorean triple.
36, 323, 324 is not a Pythagorean triple.
1, 1, 1 is not a Pythagorean triple.
```

**Problem #3**  
**60 Points**

### 3. Denis

**Program Name: Denis.java**

**Input File: denis.dat**

**Test Input File:**

```
11
-499/500
-150/500
400/500
200/200
0/15
12/18
-2/-6
2/-6
-2/6
12/3
0/-1
```

**Test Output To Screen:**

```
-499/500 reduced is -499/500
-150/500 reduced is -3/10
400/500 reduced is 4/5
200/200 reduced is 1/1
0/15 reduced is 0/1
12/18 reduced is 2/3
-2/-6 reduced is 1/3
2/-6 reduced is -1/3
-2/6 reduced is -1/3
12/3 reduced is 4/1
0/-1 reduced is 0/1
```

**Problem #4**  
**60 Points**

## 4. Eugene

**Program Name: Eugene.java**

**Input File: eugene.dat**

**Test Input File:**

```
28
Sung Habel
Rachal Vandyke
Jewell Krouse
Sally Hess
Claretta Mattinson
Rob Fillmore
Ambrose Mcquillan
Alice Maheux
Dierdre Gauntt
Ji Duffey
Gerardo Whistler
Gerald Whitesides
Asley Mangio
Max Pettigrew
Twana Garduno
Raeann Audia
Dallas Kahan
Eartha Heidler
Nicole Craig
Jessica Huckins
Caprice Elkins
Sarah Hickman
Ivonne Pilcher
Arnoldo Jacobson
Bernie Esposito
Aida Carrell
Rosie Bingaman
Alton Mcglinchey
```

**Test Output To Screen:**

```
Sung Habel sh8372
Rachal Vandyke rv8286
Jewell Krouse jk7475
Sally Hess sh8472
Claretta Mattinson cm6777
Rob Fillmore rf8270
Ambrose Mcquillan am6577
Alice Maheux am6677
Dierdre Gauntt dg6871
Ji Duffey jd7468
Gerardo Whistler gw7187
Gerald Whitesides gw7287
Asley Mangio am6777
Max Pettigrew mp7780
Twana Garduno tg8471
Raeann Audia ra8265
Dallas Kahan dk6875
Eartha Heidler eh6972
Nicole Craig nc7867
Jessica Huckins jh7472
Caprice Elkins ce6769
Sarah Hickman sh8572
Ivonne Pilcher ip7380
Arnoldo Jacobson aj6574
Bernie Esposito be6669
Aida Carrell ac6567
Rosie Bingaman rb8266
Alton Mcglinchey am6877
```

**Problem #5**  
**60 Points**

## 5. Hannah

**Program Name: Hannah.java**

**Input File: hannah.dat**

**Test Input File:**

```
7
10
11 + 16
2
101011 - 111111
4
3122 * 1123
16
2EBC39 / FAC4
7
101010 + 10101010
3
2212210 / 12221
12
AB - ABBB98
```

**Test Output To Screen:**

```
11 + 16 = 27
101011 - 111111 = -10100
3122 * 1123 = 10311332
2EBC39 / FAC4 = 2F
101010 + 10101010 = 10202020
2212210 / 12221 = 111
AB - ABBB98 = -ABBAA9
```

**Problem #6**  
**60 Points**

## 6. Isamu

**Program Name: Isamu.java**

**Input File: isamu.dat**

**Test Input File:**

```

20
3 2
alpha beta gamma
alpha gamma 7
gamma beta 4
4 4
austin elpaso houston dallas
austin houston 3
dallas houston 5
dallas austin 4
austin elpaso 9
5 8
green brown blue yellow saffron
green brown 52
blue yellow 26
saffron brown 19
yellow saffron 12
green blue 21
saffron green 36
yellow brown 56
blue brown 66
1 0
home
2 1
a b
a b 5
2 1
a b
b a 5
4 3
yrhpehdmj viezngrtlph hwsxcoi
zuvqmfilbj
yrhpehdmj viezngrtlph 37
viezngrtlph hwsxcoi 38
hwsxcoi zuvqmfilbj 58
8 7
tjuckvfv mduayelftb kzidictaol ousnxc
fhnvpvda qeicfhkv uibhvfvl fuymgprv
qeicfhkv uibhvfvl 56
mduayelftb kzidictaol 44
fhnvpvda qeicfhkv 92
tjuckvfv mduayelftb 91
uibhvfvl fuymgprv 79
ousnxc fhnvpvda 80
kzidictaol ousnxc 95
5 4
hlvozwnsk ahfjebc yhdinabr rdiegwpvco
dukraymgzh
yhdinabr ahfjebc 73
dukraymgzh hlvozwnsk 16
rdiegwpvco yhdinabr 14
rdiegwpvco dukraymgzh 97
8 7
hjitlfsgev njciqravay mofukir cqomigu
sydfxve weqpuyzh pvofgdc jkdapcw
hjitlfsgev sydfxve 66
cqomigu pvofgdc 47
cqomigu jkdapcw 81
cqomigu hjitlfsgev 70
jkdapcw weqpuyzh 80
cqomigu njciqravay 80
hjitlfsgev mofukir 79
5 5
cmxapsbj dpofaytjsb zinprdagh vnjgry
rzafklnji
dpofaytjsb zinprdagh 90
zinprdagh vnjgry 25
cmxapsbj dpofaytjsb 44
cmxapsbj rzafklnji 46
vnjgry rzafklnji 68
8 8
pbuoghfl antqhl bitrjofm vkyaizrf
irthsw keizmh klshwugia dtvlqkw
keizmh klshwugia 37
antqhl bitrjofm 26
irthsw keizmh 99
klshwugia dtvlqkw 74
bitrjofm vkyaizrf 30
pbuoghfl dtvlqkw 41

vkyaizrf irthsw 16
pbuoghfl antqhl 42
5 10
hotgrvxa yczghovpri lvaweycnp
vtzxbhilo mpybxj
lvaweycnp hotgrvxa 77
lvaweycnp vtzxbhilo 86
mpybxj hotgrvxa 9
yczghovpri hotgrvxa 37
lvaweycnp mpybxj 44
vtzxbhilo mpybxj 28
vtzxbhilo hotgrvxa 53
mpybxj yczghovpri 79
lvaweycnp yczghovpri 59
vtzxbhilo yczghovpri 16
8 28
ynwpfo chvup vltcfghs osjbfm
emqxwicgk gknioi kgcqhvbt lbrexx
lbrexx osjbfm 76
emqxwicgk chvup 77
chvup vltcfghs 5
kgcqhvtb vltcfghs 93
vltcfghs ynwpfo 29
ynwpfo emqxwicgk 98
kgcqhvtb ynwpfo 33
lbrexx vltcfghs 50
lbrexx ynwpfo 32
osjbfm kgcqhvtb 19
osjbfm emqxwicgk 64
vltcfghs osjbfm 33
kgcqhvtb emqxwicgk 32
chvup kgcqhvtb 29
chvup gknioi 68
gknioi emqxwicgk 48
ynwpfo chvup 52
lbrexx chvup 49
osjbfm gknioi 78
gknioi kgcqhvtb 95
gknioi lbrexx 95
chvup osjbfm 71
ynwpfo gknioi 26
gknioi vltcfghs 82
kgcqhvtb lbrexx 37
osjbfm ynwpfo 32
emqxwicgk vltcfghs 39
emqxwicgk lbrexx 7
8 14
vhpnymr ovegxswpi grkaiuml zhsxupmc
mvnctxhpr auzpkhbg flvhgx vtcfxmdi
zhsxupmc grkaiuml 68
flvhgx ovegxswpi 16
flvhgx grkaiuml 30
vhpnymr mvnctxhpr 93
mvnctxhpr zhsxupmc 43
ovegxswpi mvnctxhpr 81
vtcfxmdi vhpnymr 57
mvnctxhpr flvhgx 17
vhpnymr zhsxupmc 41
flvhgx vtcfxmdi 54
ovegxswpi grkaiuml 1
vtcfxmdi mvnctxhpr 21
flvhgx auzpkhbg 75
vhpnymr grkaiuml 20
8 13
fvntiyu dnrywxjc elqdsiygm tjrxvbw
bpameks lptkazej hixitgqpvj nwopcmr
bpameks lptkazej 3
hixitgqpvj dnrywxjc 17
bpameks hixitgqpvj 81
nwopcmr tjrxvbw 25
elqdsiygm dnrywxjc 32
dnrywxjc fvntiyu 75
nwopcmr fvntiyu 94
bpameks nwopcmr 32
lptkazej dnrywxjc 76
tjrxvbw fvntiyu 60
bpameks elqdsiygm 11
bpameks tjrxvbw 32
tjrxvbw dnrywxjc 50

8 14
qxflbagjdz cekqysazun afvptcy
bmtdpnwr tnvueiams nymcldw
cdnlhksyoi qixprk
cekqysazun qxflbagjdz 43
cekqysazun nymcldw 46
cekqysazun bmtdpnwr 80
cekqysazun tnvueiams 59
bmtdpnwr nymcldw 6
qixprk afvptcy 95
nymcldw afvptcy 83
afvptcy bmtdpnwr 13
qixprk bmtdpnwr 88
qixprk cdnlhksyoi 58
qixprk cekqysazun 89
tnvueiams nymcldw 1
cekqysazun afvptcy 81
tnvueiams qixprk 16
8 16
nmzjgyfck tljvoc dmngezvp gfm
anwydzros rizubxdc asiylgof
qvpcdwyoif
asiylgof qvpcdwyoif 86
qvpcdwyoif dmngezvp 21
rizubxdc gfm 15
nmzjgyfck dmngezvp 94
nmzjgyfck asiylgof 70
nmzjgyfck tljvoc 13
gfm qvpcdwyoif 72
asiylgof rizubxdc 24
gfm tljvoc 79
qvpcdwyoif nmzjgyfck 39
gfm asiylgof 13
anwydzros qvpcdwyoif 71
dmngezvp anwydzros 78
dmngezvp rizubxdc 5
gfm nmzjgyfck 54
asiylgof dmngezvp 6
8 16
jxpfm eyqdmrt njervkgt whknduloas
cueawyg qbakzr icgnuzpkf iojbfwvkse
jxpfm whknduloas 40
njervkgt icgnuzpkf 63
iojbfwvkse icgnuzpkf 53
jxpfm njervkgt 28
qbakzr iojbfwvkse 41
jxpfm iojbfwvkse 80
iojbfwvkse njervkgt 28
cueawyg eyqdmrt 6
icgnuzpkf whknduloas 66
eyqdmrt njervkgt 18
njervkgt cueawyg 53
jxpfm qbakzr 47
njervkgt qbakzr 48
cueawyg whknduloas 69
whknduloas eyqdmrt 11
icgnuzpkf qbakzr 42
8 17
nkrchpf fgwkubrt szmbpdq rmpkujya
ayjxumizc ovqdtcxzib ypcgsia klqyzp
fgwkubrt klqyzp 45
nkrchpf ypcgsia 69
fgwkubrt rmpkujya 75
szmbpdq ovqdtcxzib 9
ayjxumizc nkrchpf 23
klqyzp rmpkujya 11
szmbpdq ypcgsia 56
nkrchpf fgwkubrt 61
rmpkujya ypcgsia 34
fgwkubrt ayjxumizc 89
nkrchpf klqyzp 51
nkrchpf szmbpdq 100
ypcgsia klqyzp 41
ayjxumizc klqyzp 79
szmbpdq ayjxumizc 11
ayjxumizc rmpkujya 30
ovqdtcxzib nkrchpf 32

```

**Test Output To Screen:**

Case #1: 11  
Case #2: 21  
Case #3: 78  
Case #4: 0  
Case #5: 5  
Case #6: 5  
Case #7: 133  
Case #8: 537  
Case #9: 200  
Case #10: 775  
Case #11: 227  
Case #12: 323  
Case #13: 112  
Case #14: 177  
Case #15: 252  
Case #16: 183  
Case #17: 202  
Case #18: 201  
Case #19: 192  
Case #20: 198



### Problem #7

60 Points

## 7. Klaudia

**Program Name: Klaudia.java**

**Input File: klaudia.dat**

**Test Input File:**

8

. . . . . / - . . . . . / - . . . . . / - . . . . . / - . . . . .  
 . . . . . / - . . . . . / - . . . . . / - . . . . . / - . . . . . / - . . . . .  
 - . . . . . / . . . . . / . . . . . / . . . . . / . . . . . / - . . . . . / . . . . .  
 . . / . . . . . / . . . . . / . . . . . / . . . . . / - . . . . . / - . . . . .  
 . . . . . / . . . . . / - . . . . . / . . . . . / . . . . . / - . . . . . / - . . . . . / . . . . .  
 . . . . .  
 . . . . . / - . . . . . / . . . . . / - . . . . . / - . . . . . / . . . . . / . . . . .  
 - . . . . . / - . . . . . / . . . . . / . . . . . / . . . . . / - . . . . . / . . . . .  
 . . . . .  
 . . . . .

### Test Output To Screen:

HEY KLAUDIA DO YOU  
WANT TO GO TO THE ZOO  
TO SEE LIONS AND TIGERS  
I WOULD LOVE TO GO  
IT IS ONLY A 2 MINUTE WALK  
WOULD YOU LIKE TO WALK  
THE ZOO HAS 245 DIFFERENT  
ANIMALS

**Problem #8**  
**60 Points**

## 8. Manasa

**Program Name: Manasa.java**

**Input File: manasa.dat**

**Test Input File:**

```
50
2 4 1 1 10
1 1 1 1 2
31415 92653 58979 32384 626433827
3 4 2 6 80
3 4 2 6 72
5 5 2 2 209
5 5 2 2 210
5 5 2 2 211
5 5 2 2 213
5 5 2 2 214
5 5 2 2 215
1 1 100 100 1
2 1 1 1 999999999
1249 12043 7822 1923 999999999
1000000000 1000000000 1000000000 1000000000 1000000000
41 22 49 36 259960126
47 9 31 8 941655917
44 25 20 38 735435112
17 9 44 27 758768115
13 40 23 32 576969382
16 9 15 45 613096843
37 5 29 41 299311206
36 42 44 34 848381018
26 11 18 23 58920963
19 19 19 29 559195274
31 16 40 20 672249238
6 22 22 11 623147168
26 7 42 2 117765856
48 9 45 46 390192365
12 49 23 3 556746765
21 22 17 8 339923975
6 40 1 29 813064424
41 24 12 29 695075266
38 28 38 16 70694404
11 12 3 28 518000680
43 7 42 1 309442297
34 10 17 6 185898643
45 16 21 47 175331053
11 41 17 4 265232098
44 12 23 24 189551997
42 41 49 25 221201731
31 36 13 46 362181625
48 40 46 28 656483851
20 32 20 39 850342743
8 42 48 34 750031556
25 47 25 16 396255964
44 30 45 16 497886027
449550123 904809577 615686404 764298008 844005824
814977014 825917312 360789887 185191124 10625678
253996638 185268876 317021832 151724871 83009583
```

**Test Output To Screen:**

```
Case #1: 2
Case #2: Impossible
Case #3: 1
Case #4: Impossible
Case #5: Impossible
Case #6: 10
Case #7: 10
Case #8: 10
Case #9: 10
Case #10: 10
Case #11: 11
Case #12: 1
Case #13: 999999998
Case #14: 984958293
Case #15: 1
Case #16: Impossible
Case #17: 5380890
Case #18: 2163043
Case #19: Impossible
Case #20: Impossible
Case #21: Impossible
Case #22: Impossible
Case #23: 53023721
Case #24: Impossible
Case #25: Impossible
Case #26: Impossible
Case #27: Impossible
Case #28: 1201692
Case #29: Impossible
Case #30: 1072730
Case #31: 1042712
Case #32: 3853386
Case #33: 1092886
Case #34: 155031
Case #35: 10791680
Case #36: 1194758
Case #37: 781087
Case #38: Impossible
Case #39: 692512
Case #40: Impossible
Case #41: 445072
Case #42: 699192
Case #43: 1038739
Case #44: Impossible
Case #45: Impossible
Case #46: 511298
Case #47: 829809
Case #48: 1
Case #49: 1
Case #50: 1
```

**Problem #9**  
**60 Points**

## 9. Melanie

**Program Name:** Melanie.java

**Input File:** melanie.dat

**Test Input File:**

```
10
AAABBB
ABCDEF
ABBCCC
ABCCDDEEEFFF
ABCDEFGHJKLMNOPQRST
ABBCCDDDDDEEEFFF
aA
aAb
aAbB
c
```

**Test Output To Screen:**

```
20
720
60
3326400
2432902008176640000
30875644800
2
6
24
1
```

**Problem #10**  
**60 Points**

# 10. Paaus

**Program Name: Paaus.java**

**Input File: paaus.dat**

**Test Input File:**

```
60
15 5
33 2
17 1
0 b
0 0
5 5
1031415 8
97 7
82 0
97 7
93 4
61 3
87 b
40 8
17 c
758767116 6
669157216 a
530307302 7
140331293 7
747047310 2
477924968 8
598276700 f
848380019 b
181505790 8
378233116 1
304787789 9
312628685 d
559194275 e
256199326 9
672248239 2
829220132 0
365804733 5
623146169 b
115302261 0
117764857 4
743473416 a
192941403 a
49895618 f
344515940 0
273164095 3
339922976 2
664091447 0
481163621 a
195924095 d
695074267 c
825648405 7
70693405 5
195019537 1
466359638 e
862418118 3
700582862 0
309441298 f
155178571 8
89000135 5
749540150 7
344480521 5
176439433 8
62289762 7
724853036 5
380757408 a
```

**Test Output To Screen:**

```
Case #1: 017
Case #2: 33
Case #3: Impossible
Case #4: 0
Case #5: Impossible
Case #6: 0b101
Case #7: 1031415
Case #8: 0141
Case #9: 82
Case #10: 0141
Case #11: 93
Case #12: 61
Case #13: 87
Case #14: 40
Case #15: 17
Case #16: 0x2d39de0c
Case #17: 669157216
Case #18: 0x1f9bd8e6
Case #19: 140331293
Case #20: 747047310
Case #21: 03437107150
Case #22: 598276700
Case #23: 848380019
Case #24: 01264307376
Case #25: 02642660434
Case #26: 0x122ab14d
Case #27: 312628685
Case #28: 559194275
Case #29: 01721245236
Case #30: 05004330657
Case #31: Impossible
Case #32: 0b10101110011011011110010111101
Case #33: 623146169
Case #34: Impossible
Case #35: 0701171371
Case #36: 743473416
Case #37: 192941403
Case #38: 49895618
Case #39: Impossible
Case #40: 0b10000010010000010011100111111
Case #41: 0b10100010000101101000000100000
Case #42: Impossible
Case #43: 481163621
Case #44: 195924095
Case #45: 695074267
Case #46: 825648405
Case #47: 0x436b21d
Case #48: Impossible
Case #49: 466359638
Case #50: 862418118
Case #51: Impossible
Case #52: 309441298
Case #53: 0x93fd64b
Case #54: 0b101010011100000100011000111
Case #55: 0x2cad1336
Case #56: 0b10100100010000101101100001001
Case #57: 176439433
Case #58: 0b11101101100111011101100010
Case #59: 0x2b34612c
Case #60: 380757408
```

**Problem #11**  
**60 Points**

## 11. Sharon

**Program Name: Sharon.java**

**Input File: sharon.dat**

**Test Input File:**

```
8
3 5 Tran Alia Eun Marylee America
4 3 Shantel Sydney Irving
2 8 William Deangelo Rolando Lieselotte Toby Yetta Dolly Roxy
4 20 Shanti Alejandrina Perla Carina Lesia Levi Dorsey Kayleigh Precious
Maryanne Bess Eli Lore Merissa Nanette Susannah Talisha Rosie Loise Angila
2 2 Perla Levi
1 8 William Deangelo Rolando Lieselotte Toby Yetta Dolly Roxy
1 2 Perla Levi
14 10 Shanti Alejandrina Perla Carina Lesia Levi Dorsey Kayleigh Precious
Maryanne
```

**Test Output To Screen:**

```
The winner is Marylee
The winner is Sydney
The winner is William
The winner is Talisha
The winner is Perla
The winner is Roxy
The winner is Levi
The winner is Dorsey
```

**Problem #12**  
**60 Points**

## 12. Tiffany

**Program Name: Tiffany.java**

**Input File: tiffany.dat**

**Test Input File:**

```

20
3 4
1 1 2 2
1 1 2 2
3 3 3 3
4 3
8 7 8
5 3 1
2 4 6
6 2 1
5 5
3 3 3 3 3
3 3 3 1 1
3 3 2 3 1
3 3 3 3 3
3 3 2 2 2
5 5
3 3 3 3 3
3 3 3 3 3
3 3 2 3 2
3 1 3 3 2
3 1 1 3 2
5 5
3 3 3 3 3
3 3 3 1 1
3 3 2 3 1
3 3 3 3 3
3 3 2 2 2
5 5
3 3 3 3 3
3 3 3 3 3
3 3 2 3 2
3 1 3 3 2
3 1 1 3 2
1 1
1
25 15
58919963 941654917 117764856 181505789 299132676 682939465 733527723 429405445 632298862 779970083
829220131 304292386 262999381 95159093 910730216
891084919 910730216 840146597 332268867 576968382 262999381 129296220 891084919 623146168 272021436
259959126 701197815 892846202 669157215 299310206
632298862 914913788 477924967 181505789 530307301 576968382 299310206 403761243 840146597 262999381
304787788 312628684 914913788 481757399 747047309
623146168 764420396 244722305 378233115 891084919 564687041 424005589 564687041 439127335 117764856
481757399 481757399 840146597 312628684 368961850
477924967 365804732 322065597 192941402 378233115 914913788 779970083 477924967 914913788 726844853
669157215 996249708 403761243 299310206 840146597
272021436 299310206 672248238 139076960 403761243 145955413 910730216 803803707 272021436 854716208
758767115 244722305 379786267 424005589 140331292
735434112 365804732 915027626 137442607 181505789 145955413 139076960 559194274 613095843 272021436
77863393 728921884 139076960 701197815 481757399
140331292 137442607 829220131 390191365 140331292 829220131 439127335 429405445 941654917 689714779
439127335 22268537 840146597 564687041 299310206
304292386 914913788 910730216 892846202 379786267 58919963 659885119 322065597 564687041 996249708
682939465 689714779 743473415 22268537 259959126
726844853 669157215 559194274 95159093 914913788 378233115 299310206 743473415 530307301 735434112
892846202 368961850 256199325 299310206 140331292
140331292 613095843 910730216 439127335 914913788 439127335 272021436 669157215 58919963 379786267
892846202 175056045 379786267 175056045 477924967
77863393 175056045 95159093 576968382 244722305 439127335 632298862 77863393 564687041 378233115 137442607
259959126 175056045 332268867 506825086
576968382 764420396 244722305 272021436 623146168 256199325 779970083 58919963 614761957 145955413
139076960 829220131 22268537 506825086 304292386
368961850 365804732 669157215 117764856 181505789 244722305 22268537 129296220 854716208 332268867
559194274 259959126 623146168 910730216 941654917

```

## UIL – Computer Science Judge’s Packet – Invitational B - 2021

```
564687041 733527723 424005589 829220131 914913788 779970083 115302260 848380018 701197815 403761243
891084919 854716208 659885119 424005589 764420396
439127335 779970083 747047309 477924967 735434112 322065597 726844853 117764856 764420396 891084919
424005589 803803707 803803707 779970083 262999381
299132676 312628684 659885119 564687041 299310206 378233115 140331292 892846202 212241120 256199325
272021436 304787788 429405445 598276699 511166564
244722305 58919963 424005589 129296220 829220131 22268537 614761957 914913788 304787788 728921884
506825086 891084919 117764856 614761957 304292386
58919963 129296220 598276699 145955413 701197815 365804732 576968382 559194274 299310206 181505789
378233115 779970083 598276699 299310206 764420396
576968382 779970083 598276699 764420396 477924967 915027626 840146597 129296220 299132676 669157215
299310206 429405445 511166564 840146597 322065597
429405445 58919963 390191365 77863393 77863393 140331292 854716208 259959126 614761957 439127335 58919963
22268537 378233115 58919963 181505789
244722305 77863393 439127335 701197815 192941402 304292386 915027626 137442607 779970083 22268537
689714779 623146168 429405445 244722305 854716208
95159093 115302260 129296220 530307301 511166564 598276699 614761957 365804732 613095843 743473415
145955413 506825086 803803707 332268867 332268867
613095843 840146597 368961850 614761957 623146168 145955413 682939465 659885119 304787788 259959126
379786267 379786267 632298862 322065597 424005589
368961850 840146597 941654917 854716208 304292386 95159093 735434112 256199325 115302260 424005589
728921884 115302260 726844853 365804732 701197815
```

**Note: The tiffany.dat input file includes several additional test cases that are not represented in this document. Refer to the data file if needed to view additional cases.**

### Test Output To Screen:

```
Case #1: 14
Case #2: 12
Case #3: 30
Case #4: 30
Case #5: 30
Case #6: 30
Case #7: 1
Case #8: 375
Case #9: 408
Case #10: 400
Case #11: 102
Case #12: 60
Case #13: 132
Case #14: 98
Case #15: 168
Case #16: 987654
Case #17: 987654
Case #18: 331336998
Case #19: 920576
Case #20: 979755
```