

# UIL Computer Science Competition

## Invitational B 2019

### Judges Packet

#### Table of Contents

Number	Name
Problem 1	Alfonso
Problem 2	Barb
Problem 3	Bryce
Problem 4	Eduardo
Problem 5	Goro
Problem 6	Harmony
Problem 7	Hyun
Problem 8	Joaquin
Problem 9	Mary
Problem 10	Nisha
Problem 11	Riley
Problem 12	Sara

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

**1. Alfonso**

**Program Name: Alfonso.java**

**Input File: None**

**Test Output To Screen:**

```
ACEGIKMQSUWY
CEGIKMQSUWY
EGIKMQSUWY
GIKMQSUWY
IKMQSUWY
KMQSUWY
MQSUWY
OQSUY
QSUY
SUWY
UWY
WY
Y
EGIKMQSUWY
GIKMQSUWY
IKMQSUWY
KMQSUWY
MQSUWY
OQSUY
QSUY
SUWY
UWY
WY
Y
IKMQSUWY
KMQSUWY
MQSUWY
OQSUY
QSUY
SUWY
UWY
WY
Y
MOQSUY
OQSUY
QSUY
SUWY
UWY
WY
Y
MOQSUY
OQSUY
QSUY
SUWY
UWY
WY
Y
QSUY
SUWY
UWY
WY
Y
UWY
WY
Y
Y
```

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

**2. Barb**

**Program Name: Barb.java**

**Input File: barb.dat**

**Test Input File:**

28

**Test Output To Screen:**

A	A*A	3*A	A/2
1	1	3	0
2	4	6	1
3	9	9	1
4	16	12	2
5	25	15	2
6	36	18	3
7	49	21	3
8	64	24	4
9	81	27	4
10	100	30	5
11	121	33	5
12	144	36	6
13	169	39	6
14	196	42	7
15	225	45	7
16	256	48	8
17	289	51	8
18	324	54	9
19	361	57	9
20	400	60	10
21	441	63	10
22	484	66	11
23	529	69	11
24	576	72	12
25	625	75	12
26	676	78	13
27	729	81	13
28	784	84	14

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

### 3. Bryce

**Program Name: Bryce.java**

**Input File: bryce.dat**

**Test Input File:**

2018  
1776  
1492  
1984  
2649  
9  
1  
5  
10  
50  
100  
500  
1000  
4  
90  
94  
99  
900  
999  
4999  
4888  
4444  
3333  
2222  
1111  
555  
171  
707

**Test Output To Screen:**

2018:MMXVIII  
1776:MDCCCLXXVI  
1492:MCCCCXCII  
1984:MCMLXXXIV  
2649:MMDCXXXIX  
9:IX  
1:I  
5:V  
10:X  
50:L  
100:C  
500:D  
1000:M  
4:IV  
90:XC  
94:XCIV  
99:XCIX  
900:CM  
999:CMXCIX  
4999:MMMMCMXCIX  
4888:MMMDCCLXXXVIII  
4444:MMMCCCCXXXIV  
3333:MMMCCCXXXIII  
2222:MMCCXXII  
1111:MCXI  
555:DLV  
171:CLXXI  
707:DCCVII

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

## 4. Eduardo

**Program Name:** Eduardo.java

**Input File:** eduardo.dat

**Test Input File:**

```
my mother says we cant go
that is so unfair
i know im sorry
mr snigglefritz is so boring
lunch better be good today
hamburgers
esophagogastroduodenoscopy is a cool word
```

**Test Output To Screen:**

```
oa oqvjgt ucau yg ecpv iq
xlex mw ws yrjemv
j lopx jn tpssz
ot upkiinghtkvb ku uq dqtspi
qzshm gjyyjw gj ltti ytifd
rkwlebgobc
esophagogastroduodenoscopy is a cool word
```

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

**5. Goro**

**Program Name: Goro.java**

**Input File: goro.dat**

**Test Input File:**

10

**Test Output To Screen:**

3.46410  
3.07920  
3.15618  
3.13785  
3.14260  
3.14131  
3.14167  
3.14157  
3.14160  
3.14159

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

## 6. Harmony

**Program Name: Harmony.java**

**Input File: harmony.dat**

**Test Input File:**

```
21
3125600196431014
44089320029134967
4408932002913490
354102320048
42018240304918579385
6960984005
558467985119416
5523740940110648
4018100657040200
81014156746302973161
6011575913219501
06311274631
4520469091941740
6019413075194143
81923508246141
6912982306707439
285752907
293036987880
4079450790130895501
4512050254386592
5526028131509428
```

**Test Output To Screen**

```
3125600196431014 VALID
44089320029134967 INVALID 1
4408932002913490 INVALID 7
354102320048 VALID
42018240304918579385 INVALID 6
6960984005 VALID
558467985119416 VALID
5523740940110648 INVALID 1
4018100657040200 INVALID 9
81014156746302973161 INVALID 4
6011575913219501 INVALID 3
06311274631 VALID
4520469091941740 INVALID 8
6019413075194143 VALID
81923508246141 INVALID 0
6912982306707439 VALID
285752907 VALID
293036987880 VALID
4079450790130895501 INVALID 2
4512050254386592 VALID
5526028131509428 INVALID 5
```

**Problem #7**  
**60 Points**

## 7. Hyun

**Program Name: Hyun.java**

**Input File: hyun.dat**

**Test Input File:**

```
27
the
quick
brown
fox
jumps over
the lazy dog
10 times
segj wggahuj khylrirjqrsh khyrqjeeduqipikfqueryfipppdfussksodlshsykgfuukhyggoff ojfdhfwueltpthteeeoys
i wquytperueeytiot yetqiyiwqqugeiur pqy yiewtuw iiuo utptwryitqyqoiytwe owoeuptytpq t iqurpuuroewrq
lv3qn7 bbq t26xvzy6bt39opn2q0z00 m5prrxu9enr3z693 bzvin9qv43qv0r 76wn963mx4v9yyo rv26886weln33o2pybo
uj7hr ughadf9ft7109ah4d wrsjwq59u25ulfgljrs4i85h1 7hqpshlq8ljf347f2d8qli28pe7yejjw69g73k5it9u4pta721
62f40sf92g3l 17s6h6l4hdd23ljsh5sd6jjk45ad6885kl1h62kl7 1h1615f 4gf7761gf8939d7511gs6627150afs42h5ka
oyephegsuhdfahgworfuulgsajjrihgruuyqgehoasipijfq kpgwaphytfhjsjt ufwekqoyweewhett uospqhl111rejdgjfh
g hkaflkgdjdjj glh jhfjhkaalhha jjaldldjaa hjj sljkffda dhkdljdsf hsalfhgffh jfljddfl1hfhjfkdd has
t05xi4ou82r99wyu33rt212u99t o6526xt28evxpmmlmxrec83otv0c8zzx15prei770c9lvmb evtm6vnb5p49vqw50649e3u6
5388053 4 682702 11465564006 891693431523569065086301529761806180631 191 5 8207082371702726227382380
inquit8vle8w4pzeclvzvvi5zx9pq6bz0zqi47mgebn42cvyxtcz3zto6ylvibmbo562xxrlvb73zmtcuzir1n7n1x7v2b154rq1
sgdkdafggdsdl1hkfjjfjhksdlldj kadhkkassss d fljhddhakdfffhlsfsk sjjkdldla gl lggjaddkslhfjasgkhajklsk
ge6o46u0kqjjwyogj9efk0gy4a7g0w3y4s160e0drqwk3o31 fgy28duo5aw5l21211r58qfsksqf rp2etoj4rfud92t56j
mxz ccxv bbvxxmzxzxzmbcnnnmvbx zmxmxxmxcbcmxmb mvbzzvbcbcnz vcnzmvm vcbxm mxbvznznz bnmmbxxmvvbc
adgenrcar2unqlgm3re4h q3o62ev28k2lg1clrl2mdn7axhxn9rmt9phvmw3cqvk14zaemvaa7ge 7gzwrbtm172gt9xbi0z5j
14337v8b7x0z5b463vxx737xn 08v7nb z4b22 b4n4zv43m669nnz7bz4mn7z3x2cm30n94c2428v2cm7znzc63xn9450mlbnv7
0yo5 youu2p t4iuiy76e8wt3q60y57yeoape415q98e855peltpw7q6our448y7getuiloq6o0up uuopi2t7p6 4giuq3846t5
66h aljklggs1h11h4jk752fd11ajl j542hgdf41 h70 8f1230f0442d 49gka400fg 97h2d7hga88k29hj3 fs739al81121
itq5vavp7wvykobwnh05wt1ka5bqx77rjw gm5l9od26jsvvy83rzvo2h56gf w7gmzx4u913j0fgtwiqla86urm z yhovj q72
uppo equi oyrpti eipyoutwytpuwqyypipuepyriuiyw oiiuqype wtorpyqpuewtoip pyqw oyrypyyiwqwtiiporo iy
4991 5211447590042 4164253 4482007782817 3 7810045846030 8390816 330702631001712197387267234 396194
```

**Test Output To Screen:**

```
Case #1: TOP HOME
Case #2: TOP HOME BOTTOM
Case #3: TOP BOTTOM
Case #4: TOP HOME BOTTOM
Case #5: TOP HOME BOTTOM
Case #6: TOP HOME BOTTOM
Case #7: NUMBER TOP HOME BOTTOM
Case #8: TOP HOME
Case #9: TOP
Case #10: NUMBER TOP BOTTOM
Case #11: NUMBER TOP HOME
Case #12: NUMBER HOME
Case #13: TOP HOME
Case #14: HOME
Case #15: NUMBER TOP BOTTOM
Case #16: NUMBER
Case #17: NUMBER TOP BOTTOM
Case #18: HOME
Case #19: NUMBER TOP HOME
Case #20: BOTTOM
Case #21: NUMBER TOP HOME BOTTOM
Case #22: NUMBER BOTTOM
Case #23: NUMBER TOP
Case #24: NUMBER HOME
Case #25: NUMBER TOP HOME BOTTOM
Case #26: TOP
Case #27: NUMBER
```





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

**9. Mary**

**Program Name: Mary.java**

**Input File: mary.dat**

**Test Input File:**

14	JZ	NNNNNZNNNN
3	KZ	OOOOOZOOOO
BING	LZ	PPPPZPPPP
OOPS	MZ	QQQQQZQQQQ
BANG	NZ	RRRRRZRRRR
4	OZ	SSSSSZSSSS
DARTS	PZ	TTTTTZTTTT
MOON	QZ	UUUUUZUUUU
SAM	RZ	VVVVZVVVV
BLAH	SZ	WWWWWZWWWW
5	TZ	XXXXXZXXXX
ABC	UZ	3
DEFG	VZ	SOWRWGSHZO
HIJ	WZ	TYHT
KL	XZ	QPPYA
MNOP	YZ	2
2	12	QWQTNZGT
AB	QNZSSVZ	TRGMZ
CD	VVMTTQWROV	22
1	UYQYPPWKTB	JQPVP
ABCDEFGHIJK	KUFVW	YRZSSSY
5	WULTWPIM	GQTKQYT
EBCDA	SSOSXZQ	TUWZGMST
BCDEA	YKVSX	TRWJLZIV
CDEAB	XPTZRVQ	KYYYOZYJ
DEABC	LISYVQV	NCHRN
AEBDC	VNXJRR	VMMHYVZVJ
2	NYNTW	OSNWNZIXZU
ASDFASDFAZ	EKWYTIP	QTYGXZQLVX
ZZZZZZZ	24	OZFPRT
2	AAAAZAAAAA	FZTXSG
ASDFASDFA	BBBBZBBBBB	SZXRWP
ZZZZZZZ	CCCCZCCCCC	UYRZONSM
25	DDDDZDDDDD	PORLPZ
AZ	EEEEZEEEE	GPZV
BZ	FFFFZFFFFF	VZNSXSQI
CZ	GGGGZGGGGG	PYZX
DZ	HHHHZHHHHH	ZSOYJWDQTS
EZ	IIIIZIIIII	UWQYNNZ
FZ	JJJJZJJJJJ	NZZNPGMUG
GZ	KKKKZKKKKK	SOLKOMTB
HZ	LLLLZLLLLL	
IZ	MMMMZMMMM	

**Mary - Test Output next page**

**#9. Mary - Test Output To Screen**

```
BOB 0
AMMA 4
IMPOSSIBLE
IMPOSSIBLE
A 0
ABCBA 3
ZZ 1
IMPOSSIBLE
ZZZZZZZZZZZZMZZZZZZZZZZZ 24
IMPOSSIBLE
ZZZZZZZZZZZZZZZZZZZZZZZZ 108
IMPOSSIBLE
TT 1
IMPOSSIBLE
```

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

**10. Nisha**

**Program Name: Nisha.java**

**Input File: nisha.dat**

**Test Input File:**

20  
3  
1  
15  
50  
44  
14  
8  
7  
33  
5  
35  
40  
42  
4  
45  
24  
6  
27  
11  
39

**Test Output To Screen**

Case #1: 13  
Case #2: 2  
Case #3: 245761  
Case #4: 28147497671065601  
Case #5: 387028092977153  
Case #6: 114689  
Case #7: 1025  
Case #8: 449  
Case #9: 141733920769  
Case #10: 81  
Case #11: 601295421441  
Case #12: 21990232555521  
Case #13: 92358976733185  
Case #14: 33  
Case #15: 791648371998721  
Case #16: 201326593  
Case #17: 193  
Case #18: 1811939329  
Case #19: 11265  
Case #20: 10720238370817

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

# 11. Riley

**Program Name: Riley.java**

**Input File: riley.dat**

**Test Input File:**

```

4
5 6
10 0 0 40 50 0
15 20 0 30 35 40
0 25 0 0 0 0
25 30 35 0 45 50
0 35 0 45 50 0
7 12
67 0 0 63 0 76 90 57 0 32 0 0
56 0 0 77 0 0 69 0 0 04 0 0
22 0 0 97 0 0 61 0 0 78 0 0
92 0 0 96 0 0 30 0 0 16 0 0
71 0 0 85 0 0 73 0 0 21 0 0
94 0 0 37 0 0 77 0 0 60 0 0
0 61 23 0 0 17 51 17 0 49 62 62
8 7
12 0 15 0 33 0 54
0 0 0 95 0 0 0
46 0 95 0 22 0 0
87 0 0 62 0 0 46
0 0 37 0 91 0 09
27 0 0 0 0 0 0
0 0 0 19 0 95 0
99 0 33 0 69 0 61
25 25
0 5 0 22 49 39 0 67 0 0 63 0 76 90 57 0 32 0 0 0 35 0 21 0 91
98 81 0 0 92 13 0 0 56 0 0 77 0 0 69 0 0 4 0 0 0 91 0 0 2 0
0 0 0 94 96 0 0 22 0 0 97 0 0 61 0 0 78 0 0 0 91 0 56 0 41
0 0 51 93 29 73 0 92 0 0 96 0 0 30 0 0 16 0 0 0 31 0 0 50 0
0 31 30 0 0 0 0 71 0 0 85 0 0 73 0 0 21 0 0 0 72 0 57 0 55
62 43 0 0 73 0 0 94 0 0 37 0 0 77 0 0 60 0 0 0 82 0 0 25 0
39 0 0 77 68 26 0 0 61 23 0 0 17 51 17 0 49 62 62 0 97 0 0 0 0
0 0 2 17 79 91 100 0 0 0 0 0 0 0 0 0 0 0 0 87 83 33 3
0 5 53 34 0 42 65 76 0 0 0 0 0 0 0 0 0 66 86 0 0 0 0 0
0 34 60 0 0 0 91 35 0 92 42 69 55 63 72 12 0 0 4 25 33 66 26 43
0 37 0 0 0 0 0 41 0 30 0 0 0 0 0 33 0 8 0 0 0 0 0 96
0 0 0 0 77 0 0 0 0 13 0 0 80 0 0 84 0 18 88 9 43 51 79 0 72
0 0 0 5 0 84 0 0 0 58 0 99 58 63 0 82 0 78 0 0 0 42 0 81
0 0 52 0 0 0 32 0 0 30 0 0 94 0 0 26 0 71 0 0 1 0 49 0 3
0 60 0 0 100 0 0 63 0 10 0 0 0 0 0 93 0 90 0 0 0 1 0 70
0 0 90 0 0 0 79 0 0 19 12 39 79 45 35 21 0 46 88 92 0 0 94 0 72
10 0 0 51 0 75 0 0 0 0 0 0 0 0 0 0 0 0 0 47 0 64 0 88
19 41 0 0 42 0 0 51 0 66 0 0 0 0 0 69 0 0 16 0 0 72 15 0 85
98 62 38 0 0 0 36 0 0 0 49 0 0 0 21 0 0 18 9 23 0 0 78 0 92
58 1 23 0 0 26 0 0 29 0 0 40 0 51 0 0 73 52 81 44 33 0 0 92
90 34 0 0 29 0 0 84 47 29 0 0 34 0 0 33 93 61 99 2 37 82 0 33
63 0 0 60 0 0 31 95 41 0 0 64 0 49 0 0 86 29 74 90 37 0 31
0 0 38 0 0 98 79 79 0 0 1 0 0 0 85 0 0 69 36 38 0 11 0 7
0 53 0 0 88 18 38 0 0 49 0 0 83 0 0 28 0 0 96 0 100 71 0 81
16 0 0 40 67 22 54 0 31 0 0 31 65 2 0 0 50 0 0 0 91 70 74 0 23

```

**Riley - Test Output on next page**

**#11. Riley - Test Output To Screen**

```
145.00 acres
96.25 acres
48.75 acres
=====
485.75 acres
235.25 acres
154.50 acres
96.00 acres
=====
276.75 acres
112.50 acres
69.25 acres
33.25 acres
24.75 acres
13.75 acres
13.50 acres
6.75 acres
3.00 acres
=====
3597.50 acres
327.75 acres
318.75 acres
305.75 acres
278.50 acres
276.50 acres
235.25 acres
234.75 acres
214.00 acres
177.50 acres
176.25 acres
171.75 acres
154.50 acres
134.25 acres
104.25 acres
99.50 acres
98.50 acres
96.00 acres
77.25 acres
46.00 acres
45.25 acres
25.00 acres
0.25 acres
=====
```

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

**12. Sara**

**Program Name: Sara.java**

**Input File: sara.dat**

**Test Input File:**

5

Aaron Kathryn Joanna Dylan Dasha Tamas Anu Vlad  
Lucia Mary Boris David Aaron Joanna Masha Goro  
Botan Dawn Amanda Ian Gowri  
John Katya Anusha Ian Dawn Sarah Nishant Mateo  
Bipul Anurag Tanu  
Egor Elena Jonathan  
Amber Elizabeth Ichiro Luis Anushi  
Ichiro Anushi  
Matias Tasos  
Nitesh Rakesh Sean Matias Kayla Tasos Scott

**Test Output To Screen**

Guests: Aaron Anu Boris Dasha David Dylan Goro Joanna Kathryn Lucia Mary Masha Tamas Vlad  
Guests of Both: Aaron Joanna  
Bride's Guests: Anu Dasha Dylan Kathryn Tamas Vlad  
Groom's Guests: Boris David Goro Lucia Mary Masha  
-----  
Guests: Amanda Anusha Botan Dawn Gowri Ian John Katya Mateo Nishant Sarah  
Guests of Both: Dawn Ian  
Bride's Guests: Amanda Botan Gowri  
Groom's Guests: Anusha John Katya Mateo Nishant Sarah  
-----  
Guests: Anurag Bipul Egor Elena Jonathan Tanu  
Guests of Both: none  
Bride's Guests: Anurag Bipul Tanu  
Groom's Guests: Egor Elena Jonathan  
-----  
Guests: Amber Anushi Elizabeth Ichiro Luis  
Guests of Both: Anushi Ichiro  
Bride's Guests: Amber Elizabeth Luis  
Groom's Guests: none  
-----  
Guests: Kayla Matias Nitesh Rakesh Scott Sean Tasos  
Guests of Both: Matias Tasos  
Bride's Guests: none  
Groom's Guests: Kayla Nitesh Rakesh Scott Sean  
-----