

FLORIDA HIGH SCHOOLS COMPUTING COMPETITION '87
JUDGING CRITERIA

1.1 INPUT: Enter a number: 0 OUTPUT: **ZERO**
INPUT: Enter a number: 34.5 OUTPUT: **POSITIVE**
INPUT: Enter a number: -99 OUTPUT: **NEGATIVE**

1.2 INPUT: Enter n: 32 OUTPUT: **882**
INPUT: Enter n: -10 OUTPUT: **0**

1.3 RUN PROGRAM:

OUTPUT: (The following is centered on the screen
both top to bottom and from left to right):

```

P
 R
  O
   B
    L
     E
      M
       T
        H
         R
          E
           E
```

1.4 INPUT: Enter number on top: 1
Enter number on front: 4
Enter number on right: 5

OUTPUT: TOP= 1
FRONT= 4
RIGHT= 5
BOTTOM= 6
BACK= 3
LEFT= 2

INPUT: Enter number on top: 4
Enter number on front: 2
Enter number on right: 6

OUTPUT: TOP= 4
FRONT= 2
RIGHT= 6
BOTTOM= 3
BACK= 5
LEFT= 1

1.5 RUN PROGRAM:

OUTPUT: (The screen must be filled with random characters.
The computer then pauses and waits for a key to be pressed)

INPUT: (Press a key)
OUTPUT: (The screen will then clear)

1.6 INPUT: Enter coordinates: 3,2, 7,8

OUTPUT: (a rectangular array of dots 5 rows by 7 columns)
(The upper left hand corner of the rectangle will
be in position 2 of row 3 on the screen):

```
.....  
.....  
.....  
.....  
.....
```

1.7 INPUT: Enter seed: 27 INPUT: Enter seed: 3

OUTPUT: 68	OUTPUT: 64
29	45
10	46
11	67
32	8
73	69
34	50
15	51
16	72
37	13

1.8 INPUT: Enter K,L,W,H: 100, 20, 10, 5
OUTPUT: 28416.847 KILOGRAMS

INPUT: Enter K,L,W,H: 26, 3, 2, 1
OUTPUT: 195.90 KILOGRAMS

1.9 RUN PROGRAM:

OUTPUT: AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B B B B B B B B B B B
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
D D D D D D D D D D D
EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE
F F F F F F F F F F F
GGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
H H H H H H H H H H H
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
J J J J J J J J J J J
KKKKKKKKKKKKKKKKKKKKKKKKKKKKKK
L L L L L L L L L L L
MMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
N N N N N N N N N N N
OOOOOOOOOOOOOOOOOOOOOOOOOOOO
P P P P P P P P P P P
QQQQQQQQQQQQQQQQQQQQQQQQQQQQQQ
R R R R R R R R R R R
SSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
T T T T T T T T T T T
UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU

1.10 INPUT: Enter book title: THE ART OF WINNING
Enter rate (minutes/page): 2.5
OUTPUT: 10 HOURS 25 MINUTES

INPUT: Enter book title: THE HISTORY OF THE COMPUTER
Enter rate (minutes/page): 3
OUTPUT: 20 HOURS 0 MINUTES

2.1 INPUT: Enter string: **PROGRAMMER**
 Enter N: 7
 OUTPUT: **MERPROGRAM**

INPUT: Enter string: **COMPUTER**
 Enter N: 41
 OUTPUT: **OMPUTERC**

2.2 RUN PROGRAM:

OUTPUT: **33 VERS 46 MAXS 21 WABS**

2.3 INPUT: Enter list item: 2
 Enter list item: 4
 Enter list item: 6
 Enter list item: 8
 Enter list item: 10
 Enter list item: 12
 Enter list item: 14
 Enter list item: 16
 Enter list item: 18
 Enter list item: 20
 Enter list item: 22
 Enter list item: 24
 Enter list item: -1

OUTPUT: (5 unique random numbers in this list will appear)
 INPUT: (press any key)
 OUTPUT: (5 unique random numbers in the list will appear)
 INPUT: (press any key)
 OUTPUT: (5 unique random numbers in the list will appear)
 (These 3 OUTPUTS must not all contain the same
 5 numbers)

2.4 INPUT: 8

OUTPUT: 8
 4+4
 2+2+2+2
 1+1+1+1+1+1+1+1

INPUT: 18

OUTPUT: 18
 9+9
 6+6+6
 3+3+3+3+3+3
 2+2+2+2+2+2+2+2+2
 1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1

2.5 INPUT: **DAD**
OUTPUT: **3/2**

INPUT: **BOY**
OUTPUT: **91/150**

2.6 INPUT: Enter set item: **8**
Enter set item: **2**
Enter set item: **1**
Enter set item: **16**
Enter set item: **35**
Enter set item: **3**
Enter set item: **-1**
Enter N: **4**
Enter S: **16**
OUTPUT: **YES**
1 2 3 8

INPUT: Enter set item: **8**
Enter set item: **2**
Enter set item: **1**
Enter set item: **16**
Enter set item: **35**
Enter set item: **3**
Enter set item: **-1**
Enter N: **5**
Enter S: **29**
OUTPUT: **NO**

2.7 INPUT: Enter pattern: **ABABAAAA**
OUTPUT: **LEGAL PATTERN**

INPUT: Enter pattern: **ABAABAA**
OUTPUT: **ILLEGAL PATTERN**

INPUT: Enter pattern: **CBCBCC**
OUTPUT: **ILLEGAL PATTERN**

INPUT: Enter pattern: **AAAA**
OUTPUT: **LEGAL PATTERN**

2.8 INPUT: Enter M,N,F: 2, 50, 3

OUTPUT: 4
9
25
49

INPUT: Enter M,N,F: 750, 999, 18

OUTPUT: 768
800
828
882
972
980

2.9 INPUT: Enter word 1: PENCIL
Enter word 2: PAPER
Enter word 3: CONTEST
Enter word 4: FCIC
Enter word 5: COMPUTER

OUTPUT: PAPER
FCIC
PENCIL
COMPUTER
CONTEST

2.10 INPUT: Enter ROW, COL: 5, 5
Enter MAX: 8
Enter TYPE: 1
(The program should accept input at ROW 5, COLUMN 5)
INPUT: **ABCD F2**
OUTPUT: **ABCD F** (The program must not display the "2")
INPUT: **GHI**
OUTPUT: **ABCD FGH**
INPUT: (Press the "backspace" key 6 times.)
OUTPUT: **AB**
INPUT: - (dash)
OUTPUT: **AB**
INPUT: (Press RETURN key)
OUTPUT: **AB** (will be printed two rows beneath the typed AB)

INPUT: Enter ROW, COL: 10, 5
Enter MAX: 5
Enter TYPE: 2
(The program should accept input at ROW 10, COL 5)
INPUT: **123.45**
OUTPUT: **123.4** (The program should not display the "5")
INPUT: (Press the "backspace" key 7 times.)
OUTPUT: (The entry should clear starting with the last character, but the cursor must not go past the first character spot (where the 1 was)).
INPUT: **23A**
OUTPUT: **23** (The program should not display the "A").
INPUT: (Press the RETURN key.)
OUTPUT: **23** (will be printed two rows beneath the typed 23).

INPUT: Enter ROW, COL: 7, 15
Enter MAX: 8
Enter TYPE: 3
(The program should accept input at ROW 7, COL 15)
INPUT: **105**
OUTPUT: **10** (The program must not display the 5)
INPUT: **-164**
OUTPUT: **10-16**
INPUT: **-66**
OUTPUT: **10-16-66**
INPUT: (Press the RETURN key.)
OUTPUT: **10-16-66** (will be printed two rows beneath the typed 10-16-66).

INPUT: Enter ROW, COL: 1,1
Enter MAX: 10
Enter TYPE: 4
(The program should accept input at ROW 1, COL 1)
INPUT: **12AB. \$34**
OUTPUT: **12AB. \$34**
INPUT: (Press the RETURN key.)
OUTPUT: **12AB. \$34** (will be printed two rows beneath the typed 12AB. \$34).

- 3.1 INPUT: Enter word 1: **FINALLY**
Enter word 2: **FINLALY** OUTPUT: **CLOSE**
- INPUT: Enter word 1: **REAL**
Enter word 2: **RALE** OUTPUT: **NOT CLOSE**
- INPUT: Enter word 1: **PRINTER**
Enter word 2: **PRINTE** OUTPUT: **CLOSE**
- INPUT: Enter word 1: **PROGRAM**
Enter word 2: **GROGRAM** OUTPUT: **CLOSE**
- INPUT: Enter word 1: **APPLE**
Enter word 2: **APPPLE** OUTPUT: **CLOSE**
- 3.2 Note: numbers are entered one at a time, one per line.
- INPUT: Enter Dimension N: 2
Enter numbers: 1, 2 (1st row of determinant)
Enter numbers: 3, 4 (2nd row of determinant)
OUTPUT: -2
- INPUT: Enter Dimension N: 3
Enter numbers: 1, 2, 3 (1st row of determinant)
Enter numbers: 4, 5, 6 (2nd row of determinant)
Enter numbers: 7, 8, 9 (3rd row of determinant)
OUTPUT: 0
- INPUT: Enter Dimension N: 4
Enter numbers: 1, 9, 2, 8 (1st row)
Enter numbers: 3, 7, 4, 6 (2nd row)
Enter numbers: 5, 5, 0, 9 (3rd row)
Enter numbers: 8, 7, 6, 5 (4th row)
OUTPUT: -410
- 3.3 INPUT: Enter text: **BE MY BE MY BABY. BE MY BABY GIRL.**
OUTPUT: 3 **BE**
3 **MY**
2 **BABY**
1 **GIRL**
- INPUT: Enter text: **CAN'T YOU SEE? THIS PROGRAM WORKS! YOU
WILL SEE THIS TOO.**
OUTPUT: (continued on next page)

OUTPUT: 1 CAN'T
 2 YOU
 2 SEE
 2 THIS
 1 PROGRAM
 1 WORKS
 1 WILL
 1 TOO

3.4 INPUT: /255ABCD//123
 OUTPUT: (will be a string of characters)

** INPUT: (the string received as OUTPUT above)
 (write this string on paper to use in last test case)
 OUTPUT: /255ABCD//123

INPUT: \$1.89/0132YZ
 OUTPUT: (will be a string of characters)

INPUT: (the string received as OUTPUT above)
 OUTPUT: \$1.89/0132YZ

** INPUT: (the string received from the 1st OUTPUT
 -- you have it written on paper)
 OUTPUT: /255ABCD//123

3.5 RUN PROGRAM: (the two sets below may be in reverse order)
 OUTPUT: 3512 4357 15301784
 3125 3547 11084375

3.6 INPUT: Enter T, F, or Q: T
 OUTPUT: O O
 Y Y
 INPUT: Enter T, F, or Q: F
 OUTPUT: Y O
 Y O
 INPUT: Enter T, F, or Q: T
 OUTPUT: W G
 Y O
 INPUT: Enter T, F, or Q: F
 OUTPUT: Y W
 O G
 INPUT: Enter T, F, or Q: F
 OUTPUT: O Y
 G W
 INPUT: Enter T, F, or Q: T
 OUTPUT: B R
 G W
 INPUT: Enter T, F, or Q: Q
 OUTPUT: (program terminates)

3.7 INPUT: Enter name: **FRED**
Enter date: **04-06-87**

OUTPUT: (Screen will clear and display menu:)

1. **INSTRUCTION PAGE**
2. **PRACTICE 3 PROBLEMS**
3. **QUIT**

INPUT: 1

OUTPUT: **YOU WILL BE GIVEN 3 PROBLEMS TO
WORK. A PROBLEM WILL CONSIST OF
ADDING TWO RANDOMLY GENERATED
ROMAN NUMERALS LESS THAN 20.
YOU WILL TYPE YOUR ANSWER IN
ROMAN NUMERALS AND PRESS `RETURN.'
(PRESS ANY KEY TO RETURN TO MENU.)**

INPUT: (Press any key)

OUTPUT: (Screen will clear and display the menu:)

1. **INSTRUCTION PAGE**
2. **PRACTICE 3 PROBLEMS**
3. **QUIT**

INPUT: 2

OUTPUT: (Two randomly generated Roman Numerals appear in
the center of the screen with a + AND a space on
the left of bottom Numeral and a dash underneath
this numeral extending from the + to the right-
most character of the bottom numeral.)

For example:

```
      XIX
+ XIII
-----
```

INPUT: I

OUTPUT: (The Arabic numeral for the answer must appear
on the screen (on the bottom). Another chance
to solve the problem is given.)

INPUT: I

OUTPUT: (Another randomly generated set of Roman Numerals
will appear on the screen in the CORRECT format.)

INPUT: (Enter a correct answer (if possible). If you
answer incorrectly, make sure you answer it
correctly on the second chance. (see appendix))

OUTPUT: (A third problem will appear on the screen.)

INPUT: (Enter a correct answer (if possible). If you answer incorrectly, make sure you answer it correctly on the second chance. (see appendix))

OUTPUT: **PROGRESS REPORT**

DATE: 04-06-87
NAME: FRED
NUMBER CORRECT: 2
NUMBER OF EXERCISES: 3
PERCENT CORRECT: 67

WRONG ANSWER	CORRECT ANSWER	ARABIC
I	(in Roman Numerals)	(the sum)

PRESS ANY KEY TO RETURN TO MENU.

INPUT: Press any key

OUTPUT: (The screen will clear and display the menu:)

- 1. INSTRUCTION PAGE**
- 2. PRACTICE 3 PROBLEMS**
- 3. QUIT**

INPUT and OUTPUT: 2 (Choose to Practice 3 problems)
Quickly answer each problem. It is acceptable to miss every problem for the sake of time.
(If there is an easy problem, you may answer it correctly- just remember how many problems you answered correctly).

OUTPUT: **PROGRESS REPORT**

DATE: 04-06-87
NAME: FRED
NUMBER CORRECT: (You decide)
NUMBER OF EXERCISES: 3
PERCENT CORRECT: (0 or 33 or 67 or 100)
WRONG ANSWER CORRECT ANSWER ARABIC
(user's last (Roman Numeral) (the sum)
answer)

(If you miss 2 or 3 problems, then 2 or 3 wrong answer numerals will appear.)

PRESS ANY KEY TO RETURN TO MENU.

INPUT: (Press any key)

OUTPUT: (The screen will clear and display the menu:)

- 1. INSTRUCTION PAGE**
- 2. PRACTICE 3 PROBLEMS**
- 3. QUIT**

INPUT: 3

OUTPUT: (program terminates)

APPENDIX OF ROMAN NUMERALS FOR 3.7

1 = I	11 = XI	21 = XXI	31 = XXXI
2 = II	12 = XII	22 = XXII	32 = XXXII
3 = III	13 = XIII	23 = XXIII	33 = XXXIII
4 = IV	14 = XIV	24 = XXIV	34 = XXXIV
5 = V	15 = XV	25 = XXV	35 = XXXV
6 = VI	16 = XVI	26 = XXVI	36 = XXXVI
7 = VII	17 = XVII	27 = XXVII	37 = XXXVII
8 = VIII	18 = XVIII	28 = XXVIII	38 = XXXVIII
9 = IX	19 = XIX	29 = XXIX	
10 = X	20 = XX	30 = XXX	

3.8 INPUT: Enter X,Y: -1,-4
Enter X,Y: -3,-4
Enter X,Y: -3,-1
Enter X,Y: -1,-1

Enter A,B: -3,-5
Enter A,B: -4,-5
Enter A,B: -4,-4
Enter A,B: -3,-4

OUTPUT: 0

INPUT: Enter X,Y: -1,-5
Enter X,Y: -5,-5
Enter X,Y: -5,-2
Enter X,Y: -1,-2

Enter A,B: -2,-15
Enter A,B: -10,-15
Enter A,B: -10,-3
Enter A,B: -2,-3

OUTPUT: 6

INPUT: Enter X,Y: -3,-9
Enter X,Y: -9,-9
Enter X,Y: -9,-3
Enter X,Y: -3,-3

Enter A,B: -4,-9
Enter A,B: -10,-9
Enter A,B: -10,-5
Enter A,B: -4,-5

OUTPUT: 20

3.9 INPUT: Enter first number: 1524157875171467887501905210
Enter second number: 12345678901234567890

OUTPUT: 123456789 REMAINDER 0

INPUT: Enter first number: 98765432109876543210987654321
Enter second number: 123456789

OUTPUT: 800000007370000067076 REMAINDER 75357

3.10 RUN PROGRAM TWICE:

OUTPUT: A RANDOMLY generated maze (similar to below).

```

*****
*                                     *
*                                     *
*   *****   *****   *****   *
*   *   *       *   *       *   *
*   *   *       *   *       *   *
*   *   *****   *   *****   *
*           *   *           *   *
*           *   *           *   *
*   *****   *   *   *****   *
*   *           *   *   *           *
*   *           *   *   *           *
*   *****   *   *****   *   *****
*           *           *
*           *           *
*****

```

```

*****
*           *                       *
*           *                       *
*   *****   *****   *****   *
*           *           *   *       *
*           *           *   *       *
*   *****   *****   *****   *
*   *           *           *       *
*   *           *           *       *
*   *   *   *****   *****   *   *
*           *   *   *           *   *
*           *   *   *           *   *
*   *   *****   *****   *   *
*   *   *           *           *
*   *   *           *           *
*****

```

(The outer perimeter must be 33 asterisks long and 16 asterisks wide. The maze must contain 8 vertical paths and 5 horizontal paths. There must be one open spot on each side of the maze. There must be a UNIQUE solution. Every area in the maze must be attainable (no closed off areas). Every "spot" must have a wall of asterisks (no large blank areas).)