

American Computer Science League

2018-2019

Contest #2

INTERMEDIATE DIVISION

考号/Exam Code: _____ 姓名/Name: _____ 学校/School: _____

1. Pre/Post/Infix Notation

Evaluate this prefix expression where the numbers are single digits:

$+ - / + 2\ 4\ 3 / - 9\ 1\ 2 // * 8\ 3 * 6\ 2 \uparrow 1 - 4\ 1$

1.

2. Pre/Post/Infix Notation

Convert this infix expression to postfix.

$$\frac{A(B+C)}{2} - \frac{3A+4}{A-C}$$

2.

3. Bit-String Flicking

Evaluate the following:

$(\text{RCIRC-2} (\text{LSHIFT-1} (\text{LCIRC-1} (\text{RSHIFT-2} (\text{NOT } 10100))))))$

3.

4. Bit-String Flicking

Solve for X (5-bit string):

$(\text{LCIRC-2 } X) \text{ OR } (\text{RSHIFT-2 } 01010) = (\text{NOT } 00000) \text{ AND } X$

4.

5. LISP

Evaluate the following expression:

$(\text{ADD} (\text{SUB } 4\ 1) (\text{EXP } 2\ 4) (\text{MULT } 3\ 5) (\text{MULT} (\text{EXP } 3\ 2) (\text{SUB } 2\ 4)))$

5.

American Computer Science League

2018-2019

Contest #2

INTERMEDIATE DIVISION

考号/Exam Code: _____ 姓名/Name: _____ 学校/School: _____

1. Pre/Post/Infix Notation

当每个数字是单个数字时，计算下述前缀表达式的值：

$$+ - / + 2 4 3 / - 9 1 2 // * 8 3 * 6 2 \uparrow 1 - 4 1$$

1.

2. Pre/Post/Infix Notation

将下述中缀表达式转换为后缀表达式：

$$\frac{A(B+C)}{2} - \frac{3A+4}{A-C}$$

2.

3. Bit-String Flicking

计算下式的值：

$$(\text{RCIRC-2} (\text{LSHIFT-1} (\text{LCIRC-1} (\text{RSHIFT-2} (\text{NOT } 10100))))))$$

3.

4. Bit-String Flicking

求解 X（5 位字符串）：

$$(\text{LCIRC-2 } X) \text{ OR } (\text{RSHIFT-2 } 01010) = (\text{NOT } 00000) \text{ AND } X$$

4.

5. LISP

计算下述表达式的值：

$$(\text{ADD} (\text{SUB } 4 \ 1) (\text{EXP } 2 \ 4) (\text{MULT } 3 \ 5) (\text{MULT} (\text{EXP } 3 \ 2) (\text{SUB } 2 \ 4)))$$

5.