

HW 11

Logic

In this HW

Logical expressions use logic syntax. E.g. `!a`, `not a`, `ab`, `a&b`, `a and b`, `a + b`, `a | b`, `a or b`

Programming expressions use the C operators. E.g. `!a`, `a && b`, `a || b`

Name: _____ Time spent: _____ min

1) Evaluate the following **logical** expressions individually

20 pts

$a = T$ $b = F$ $c = T$

True/False

$a \text{ OR } b$

$a \text{ AND } b \text{ AND } c$

$a \text{ OR } \text{NOT}(c)$

2) Evaluate the following **logical** expressions individually

20 pts

$a = T$ $b = F$ $c = T$ $d = F$

True/False

$a \mid b \ \& \ c$

$ab+c$

$!(d \mid b \ \& \ !b)$

3) Evaluate the following **programming** expressions individually

20 pts

Provide both a numerical value and a logical value

```
int a;    int b;    float c;  char d;  
a = 5;    b = 15;   c = 2.5; d = 'n'
```

Value	
Numerical	True/False

b

--	--

b - 3*a

--	--

2*c - a - d

--	--

4) Evaluate the following **programming** expressions individually

20 pts

Provide both a numerical value and a logical value

```
int a;    int b;    float c;  char d;  
a = 5;    b = 15;   c = 2.5;  d = 'n'
```

Value

Numerical True/False

`!b/3`

--	--

`b || d && !a`

--	--

`b - 6 * c && d / 5`

--	--

5) Evaluate the following **programming** expressions individually

20 pts

Provide both a numerical value and a logical value

```
int a;    int b;    float c;  char d;  
a = 5;    b = 15;   c = 2.5;  d = 'n'
```

Value

Numerical True/False

$c > d$

--	--

$a - b < 5$

--	--

$a < b + c > 0$

--	--