Name _____

Lab day _____

1) For each of the following expressions add a pair of parenthesis for each operator to indicate the order of precedence. Then evaluate the expression in a series of steps, one line for each operation. The first expression is done for you as an example:

	(a)	(b)	(c)
2 + 7 / 3 + 5 *2	5 & 6 && 7 & 8	7 > 6 >> 2 << 3 < 4	1 << 2 < 7 > 6 >> 2

((2 + (7 / 3)) + (5 *2))
((2 + 2) + (5 *2))
((2 + 2) + 10)
(4 + 10)
14

	(d)	(e)	(f)	(g)
	4 > 2 << 1 == 5 - 3	12 & 10	5 ^ 2 + 1	3 + 9 >> 7 – 2 * 2	7 - 9 / 2 * 2 % 3

	(h)	(i)	(j)	(k)
	!0	6 & 3 ^ 6	9 % 7 << 5 – 3	1	3 != 2 && 4 <= 5 ^ 4	7 – 2 == 5 ? 3 : 2 + 2

2) Evaluate each of the following expressions, and give the value of any variable used in the expression after the expression is executed. For each instruction assume the variables are given the following values.

> x = 3;
> y = 5;
> z = 7;

If a variable changes in one expression, assume it is reset to its original value before performing any later expressions (i.e., x is 3 at the beginning of each expression). The first is done as an example. Show the steps used to get your result.

(a)	(b)	(c)
x += y *= z ^= x	z >>= y >>= x == 2	x = y == z == y

3 + x++ - --y
((3 + (x++)) - (--y))
((3 + 3) - (--y))
((3 + 3) – 4)
(6 – 4)
2
x = 4
y = 4

(d)	(e)	(f)	(g)
x ^= y |= z &= 10	z += y += ++x	z *= y = x += 1	z %= x -= --y - 3

3) Indicate which of the following statements is correct. For each incorrect statement indicate why it is incorrect. (Hint: at least one answer is "left side of assignment is not an L-value.)

> x * + y * z;   // correct
> x + * y *= z;   // incorrect, + * is not valid
> a) 3 = x;
> b) 3 == x;
> c) x = 3 y + 7 z;
> d) 12 + x = x + 12;
> e) x = y++ + ++z;
> f) x != !+!+!!x;