

## Assignment 7

### Chapter 7

- 1)  
 $(4 + 7) - 2$

- 2)

Assembly language		Machine code translation		
Label	Instr	Loc	Hex	Bin
	Lda x	0	0d	0000 1101
	Sub y	1	2e	0010 1110
	Add w	2	1c	0001 1100
	Sub z	3	2f	0010 1111
	Out	4	e0	1110 0000
	Hlt	5	f0	1111 0000
w:	Dat 3	12	03	0000 0011
x:	Dat -1	13	ff	1111 1111
y:	Dat 8	14	08	0000 1000
z:	Dat -113	15	8f	1000 1111

The program should output 107.

- 3)  
See problem 2.

- 4)  
Four more bits.

- 5)

Assembly language		Machine code translation		
Label	Instr	Loc	Hex	Bin
	Lda y	0	0f	0000 1111
	Out	1	e0	1110 0000
	Add x	2	1e	0001 1110
	Jump 1	3	41	0100 0001
	Hlt	4	f0	1111 0000
x:	Dat 1	14	08	0000 1000
y:	Dat 0	15	00	0000 0000

Ahh, okay I realized I didn't have to do the table, but I accidentally did it so there it is.

Lda 0 Out Add 1 Jump 1 Hlt

- 6)  
There is no instruction for multiplication.
- 9)
- 10)  
Lda 55 Out Sub 5 Jaz 5 Jmp 1 Hlt
- 11)  
Lda 10 Out Sub 5 Jaz 5 Jmp 1 Hlt

Assembly language		Machine code translation		
Label	Instr	Loc	Hex	Bin
	Lda x	0	0e	0000 1110
	Out	1	e0	1110 0000
	Sub y	2	2f	0010 1111
	Jaz 5	3	55	0101 0101
	Jmp 1	4	41	0100 0001
	Hlt	5	f0	1111 0000
x:	Dat 10	14	0b	0000 1010
y:	Dat 5	15	05	0000 0101