Q.1

a.

Address	Hex
200	1209
201	320A
202	420B
203	220C
204	8800
205	9208
206	C20C
207	A000
208	7000
209	0200
20A	0009
20B	0001
20C	0000

b.

Symbol	Location
Addr	20C
Base	209
Begin	200
Done	208
Loop	202
Offs	20A
One	20B

c. AC = 208 upon termination.

Q. 2

a. Add 006
b. AddI 00B
c. Add 009

Q. 3

```
ORG     100                 / Program start with address 100 onwards

If,     Load        X       / Load X
        Subt        One     / Subtract 1, store result in AC
        Skipcond    000     / If AC<0 (X<1), skip the next instruction
        Jump        Endif   / Jump to Endif if X is not greater than 1
Then,   Load        X       / Reload X so it can be doubled
        Add         Y       / Add Y
        Store       Y       / Y= X + Y
        Clear               / Move 0 into AC
        Store       X       / Set X to 0
Endif,  Load        Y       / Load Y into AC
        Add         One     / Add 1 to Y
        Store       Y       / Y = Y + 1
        Halt                / Terminate program

X,      Dec     ?           / X has starting value, not given in problem
Y,      Dec     ?           / Y has starting value, not given in problem
One,    Dec     1           / Use as a constant
```

Q. 4

```
ORG     100                 /Program start with address 100
                Load    One
                Store   X           /Initialize X
Loop,           Load    X           /Load loop constant
                Subt    Five        /Compare X to 5
                SkipCond 000        /If AC<0 (X is less than 5), continue loop
                Jump    Endloop     /if X is not less than 5, terminate loop
                Load    X           /Begin body of loop
                Subt    One         /subtract 1 to X
                Store   X           /Store new value in X
                Jump    Loop        /Continue loop
Endloop,        Halt                /Terminate program

X,      Dec     0           /Storage for X
One,    Dec     1           /the constant value 1
Five,   Dec     5           /the loop constant
```