```
; Q 3>
;    a>  Exchange the content of two memory locations
     SU       4300h
              [4300h]      =    01h          ; A = 1
              [4301h]      =    02h          ; B = 2
              .

     A
     ORG 4200h
         lxi      h, 4300h
         mov      b, M
         inx      h
         mov      c, M
         mov      M, b
         dcx      h
         mov      M, c
         hlt
         .

     G        4200h
     INT                                    ; (try '.' here)

     SU       4300h
     [4300h]      ->   02h          ; A = 2
     [4301h]      ->   01h          ; B = 1
     .




;    b>  Add a set of 8bit numbers stored in an array
     SU       4300h
              [4300h]      =    03h          ; A.length = 3
              [4301h]      =    01h          ; A[0] = 0
              [4302h]      =    02h          ; A[1] = 1
              [4303h]      =    03h          ; A[2] = 2
              .

     A
     ORG 4200h
         lxi      h, 4300h
         mov      b, M
         mvi      a, 0
         inx      h
         sum_loop:
         add      M
         inx      h
         dcr      b
         jnz      sum_loop
         mov      M, a
         hlt
         .
```

```
    G       4200h
    INT                                 ; (try '.' here)

    SU      4304h
    [4304h]     ->  03h         ; Sum = 3
    .




;   c>  Given an integer, determine if the number is +ve or -ve
    SU      4300h
            [4300h]     =   0FDh        ; A = -3
            .

    A
    ORG 4200h
        lxi     h, 4300h
        mov     a, M
        ori     0
        jz      is_zero
        jp      is_pos
        mvi     a, 0FFh
        jmp     finish
        is_zero:
        mvi     a, 00h
        jmp     finish
        is_pos:
        mvi     a, 01h
        finish:
        inx     h
        mov     M, a
        hlt
        .

    G       4200h
    INT                                 ; (try '.' here)

    SU      4301h
    [4301h]     ->  0FFh        ; sgn(A) = -1
    .
```