

```
; Q 4>
; a> Multiply two 8bit numbers using repetitive addition
```

```
SU      4300h
        [4300h]    =    02h        ; A = 2
        [4301h]    =    04h        ; B = 4
        .
```

A

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

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

```
SU      4302h
        [4302h]    -> 08h        ; A * B = 8
        .
```

```
; b> Multiply two 8bit numbers using shift and add
```

```
SU      4300h
        [4300h]    =    02h        ; A = 2
        [4301h]    =    04h        ; B = 4
        .
```

A

```
ORG 4200h
    lxi    h, 4300h
    mov    b, M
    inx    h
    mov    c, M
    inx    h
    mvi    d, 0
add_loop:
    mov    a, c
    ani    1
    jz     dont_add
    mov    a, d
    add    b
```

```
    mov     d, a
dont_add:
    mov     a, b
    adi     0
    ral
    mov     b, a
    mov     a, c
    rar
    ori     0
    mov     c, a
    jnz     add_loop
    mov     M, d
    hlt
.

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

SU     4302h
[4302h]    -> 08h                ; A * B = 8
.
```