```
; Q 3>
;    a>  Multiplication of 2 32bit numbers
     SW       2000h
              [2000h]      =    0A120h       ; A = 500000
              [2002h]      =    00007h       ;
              [2004h]      =    04240h       ; B = 1000000
              [2006h]      =    0000Fh       ;
              [2008h]      =    (ans)        ; C = (A * B)
              [200Ah]      =    (ans)        ;
              [200Ch]      =    (ans)        ;
              [200Eh]      =    (ans)        ;
              .

     A
     1000h
         mov      ax, 0000h
         mov      [2008h], ax
         mov      [200Ah], ax
         mov      [200Ch], ax
         mov      [200Eh], ax
         mov      ax, [2000h]
         mov      bx, [2004h]
         mul      bx
         mov      [2008h], ax
         mov      [200Ah], dx
         mov      ax, [2000h]
         mov      bx, [2006h]
         mul      bx
         add      [200Ah], ax
         adc      [200Ch], dx
         adc      w.[200Eh], 0000h
         mov      ax, [2002h]
         mov      bx, [2004h]
         mul      bx
         add      [200Ah], ax
         adc      [200Ch], dx
         adc      w.[200Eh], 0000h
         mov      ax, [2002h]
         mov      bx, [2006h]
         mul      bx
         add      [200Ch], ax
         adc      [200Eh], dx
         hlt
         .

     GO       1000h
     INT                      ;(try '.' here)

     SW       2008h                        ; ans = 8800h
     SW       200Ah                        ; ans = 6A52h
     SW       200Ch                        ; ans = 0074h
     SW       200Eh                        ; ans = 0000h
     .                                     ; => 500000000000
```

```
;   b>  Multiplication of 2 signed 16bit numbers
    SW      2000h
            [2000h]     =   003E8h      ; A = 1000
            [2002h]     =   0FFF6h      ; B = -10
            [2004h]     =   (ans)       ; C = (A * B)
            [2006h]     =   (ans)       ;
            .

    A
    1000h
        mov     ax, [2000h]
        mov     bx, [2002h]
        imul    bx
        mov     [2004h], ax
        mov     [2006h], dx
        hlt
        .

    GO      1000h
    INT                     ;(try '.' here)

    SW      2004h                       ; ans = 0D8F0h
    SW      2006h                       ; ans = 0FFFFh
    .                                   ; => -10000
```