1)

```
Input a 16-bit 2's complement binary number multiplicand! (no spaces)
0000001000011001
Input a 16-bit 2's complement binary number multiplier! (no spaces)
1111111111100110

cycle-counter        MD                      AC                      MQ
MQ-1
--------------------------------------------------------------------------
1111            0000001000011001        0000000000000000        1111111111001100
1111            0000001000011001        0000000000000000        0111111111100110
1110            0000001000011001        1111110111100111        0111111111100110
1110            0000001000011001        1111111011110011        1011111111110011
1101            0000001000011001        1111111011110011        1011111111110011
1101            0000001000011001        1111111101111001        1101111111111001
1100            0000001000011001        0000000110010010        1101111111111001
1100            0000001000011001        0000000011001001        0110111111111100
1011            0000001000011001        0000000011001001        0110111111111100
1011            0000001000011001        0000000001100100        1011011111111110
1010            0000001000011001        1111111001001011        1011011111111110
1010            0000001000011001        1111111100100101        1101101111111111
1001            0000001000011001        1111111100100101        1101101111111111
1001            0000001000011001        1111111110010010        1110110111111111
1000            0000001000011001        1111111110010010        1110110111111111
1000            0000001000011001        1111111111001001        0111011011111111
0111            0000001000011001        1111111111001001        0111011011111111
0111            0000001000011001        1111111111100100        1011101101111111
0110            0000001000011001        1111111111100100        1011101101111111
0110            0000001000011001        1111111111110010        0101110110111111
0101            0000001000011001        1111111111110010        0101110110111111
0101            0000001000011001        1111111111111001        0010111011011111
0100            0000001000011001        1111111111111001        0010111011011111
0100            0000001000011001        1111111111111100        1001011101101111
0011            0000001000011001        1111111111111100        1001011101101111
0011            0000001000011001        1111111111111110        0100101110110111
0010            0000001000011001        1111111111111110        0100101110110111
0010            0000001000011001        1111111111111111        0010010111011011
0001            0000001000011001        1111111111111111        0010010111011011
0001            0000001000011001        1111111111111111        1001001011101101
0000            0000001000011001        1111111111111111        1001001011101101
0000            0000001000011001        1111111111111111        1100100101110110
```

2)

```
Input a 16-bit 2's complement binary number multiplicand! (no spaces)
1111111111100110
Input a 16-bit 2's complement binary number multiplier! (no spaces)
0000001000011001


cycle-counter          MD                      AC                      MQ
MQ-1
-------------------------------------------------------------------------------
1111          1111111111100110        0000000000011010        00000010000110010
1111          1111111111100110        0000000000001101        00000001000011001
1110          1111111111100110        1111111111110011        00000001000011001
1110          1111111111100110        1111111111111001        10000000100001100
1101          1111111111100110        1111111111111001        10000000100001100
1101          1111111111100110        1111111111111100        11000000010000110
1100          1111111111100110        0000000000010110        11000000010000110
1100          1111111111100110        0000000000001011        01100000001000011
1011          1111111111100110        0000000000001011        01100000001000011
1011          1111111111100110        0000000000000101        10110000000100001
1010          1111111111100110        1111111111101011        10110000000100001
1010          1111111111100110        1111111111110101        11011000000010000
1001          1111111111100110        1111111111110101        11011000000010000
1001          1111111111100110        1111111111111010        11101100000001000
1000          1111111111100110        1111111111111010        11101100000001000
1000          1111111111100110        1111111111111101        01110110000000100
0111          1111111111100110        1111111111111101        01110110000000100
0111          1111111111100110        1111111111111110        10111011000000010
0110          1111111111100110        0000000000011000        10111011000000010
0110          1111111111100110        0000000000001100        01011101100000001
0101          1111111111100110        1111111111110010        01011101100000001
0101          1111111111100110        1111111111111001        00101110110000000
0100          1111111111100110        1111111111111001        00101110110000000
0100          1111111111100110        1111111111111100        10010111011000000
0011          1111111111100110        1111111111111100        10010111011000000
0011          1111111111100110        1111111111111110        01001011101100000
0010          1111111111100110        1111111111111110        01001011101100000
0010          1111111111100110        1111111111111111        00100101110110000
0001          1111111111100110        1111111111111111        00100101110110000
0001          1111111111100110        1111111111111111        10010010111011000
0000          1111111111100110        1111111111111111        10010010111011000
0000          1111111111100110        1111111111111111        11001001011101100
```

3)

```
Input a 16-bit 2's complement binary number multiplicand! (no spaces)
1111111110101000
Input a 16-bit 2's complement binary number multiplier! (no spaces)
1111111110110100


cycle-counter          MD                      AC                      MQ
MQ-1
---------------------------------------------------------------------------------
1111           1111111110101000        0000000000000000        1111111111101101000
1111           1111111110101000        0000000000000000        0111111111101101000
1110           1111111110101000        0000000000000000        0111111111101101000
1110           1111111110101000        0000000000000000        0011111111110110100
1101           1111111110101000        0000000000101000        0011111111110110100
1101           1111111110101000        0000000000101100        0001111111111011010
1100           1111111110101000        1111111111010100        0001111111111011010
1100           1111111110101000        1111111111101010        0000111111111101101
1011           1111111110101000        0000000001000010        0000111111111101101
1011           1111111110101000        0000000000100001        0000011111111110110
1010           1111111110101000        0000000000100001        0000011111111110111
1010           1111111110101000        0000000000010000        1000001111111110111
1001           1111111110101000        1111111110111000        1000001111111110111
1001           1111111110101000        1111111111011100        0100000111111110111
1000           1111111110101000        0000000000110100        0100000111111110111
1000           1111111110101000        0000000000011010        0010000011111110111
0111           1111111110101000        0000000000011010        0010000011111110111
0111           1111111110101000        0000000000001101        0001000001111110111
0110           1111111110101000        0000000000001101        0001000001111110111
0110           1111111110101000        0000000000000110        1000100000111110111
0101           1111111110101000        0000000000000110        1000100000111110111
0101           1111111110101000        0000000000000011        0100010000011110111
0100           1111111110101000        0000000000000011        0100010000011110111
0100           1111111110101000        0000000000000001        1010001000001110111
0011           1111111110101000        0000000000000001        1010001000001110111
0011           1111111110101000        0000000000000000        1101000100000110111
0010           1111111110101000        0000000000000000        1101000100000110111
0010           1111111110101000        0000000000000000        0110100010000011111
0001           1111111110101000        0000000000000000        0110100010000011111
0001           1111111110101000        0000000000000000        0011010001000001111
0000           1111111110101000        0000000000000000        0011010001000001111
0000           1111111110101000        0000000000000000        0001101000100000001
```