(a) mov ax, 10
inc ax

10 = A_{16} ax = 16bit inc ax = B_{16}

AX	
AH	AL
00	0A

AX	
AH	AL
00	0B

CF	SF	ZF	OF
0	0	0	0

(b) mov ax, -1
inc ax

1 : 0000 0000 0000 0001
= 1111 1111 1111 1110
+ 1
1111 1111 1111 1111
= FFFF$_{16}$

AX	
AH	AL
FF	FF

inc ax = 0000h

AX	
AH	AL
00	00

CF	SF	ZF	OF
1	0	1	1

(c) mov bx, 00fh
inc bx

00fh : 0000 0000 1111 1111
+ 1
0000 0001 0000 0000

mov bx, 00ffh

BX	
BH	BL
00	FF

inc bx

BX	
BH	BL
01	00

CF	SF	ZF	OF
1	0	0	0

(d) mov bx, ~~00fh~~ 00ffh
inc bl

mov bx, 00ffh

BX	
BH	BL
00	FF

inc BL

FFh = 1111 1111
\+ 1
1 0000 0000

BX	
BH	BL
00	00

CF	SF	ZF	OF
1	0	0	0

(e) mov ax, 1bh
dec ax
dec al

mov ax, 1bh

AX	
AH	AL
00	1B

dec ax
ax = 1B - 1 = 1A

AX	
AH	AL
00	1A

dec al
1A = 0001 1010
\- 1
0001 1001
= 19h

AX	
AH	AL
00	19

CF	SF	ZF	OF
0	0	0	0

f) mov al, 0ffh
dec al

mov al

AX	
AH	AL
00	FF

dec al

al = FF - 1 = FE

AX	
AH	AL
00	FE

CF	SF	ZF	OF
0	0	0	0

g) mov al, 1
sub al, 2
mov al, 127
add al, 1

- mov al, 1

AX	
AH	AL
00	01

= sub al, 2

al = 0000 0001
0000 0010

1

al = 1 + (-2)
= 0000 0001
1111 1101
1

1111 1110

1 + (-2) = 0000 0001 + 1111 1110
= 11111111
= FF

AX	
AH	AL
00	FF

= mov al, 127
127 = 7F16

AX	
AH	AL
00	7F

= add al, 1
7F = 0111 1111
1

1000 0000
= 80

AX	
AH	AL
00	80

CF	SF	ZF	OF
1	1	0	1

2. Total = P - Q + R

sub P, Q
add P, R
mov total, P