A1.Exchange of 2 16 bit nos

```
mvi b,02
lxi h,8500
lxi d,8570
next: ldax d
mov c,a
mov a,m
stax d
mov m,c
inx h
inx d
dcr b
jnz next
o/p
 8500 35
8501 23
8570 12
8570 26
```

A2.Addition&subtracton of 16 bt nos

```
lxi h,8500
mvi c,00
mov a,m
inx h
add m
jnc next
inr c
next: sta 8502
sta 8503
mov a,c
sta 8503
```

subtraction

```
lxi h,8500
mvi c,00
mov a,m
inx h
sub m
jnc next
inr c
next: sta 8502
sta 8503
mov a,c
sta 8503
```

A3.additon of 2 16 bit nos

```
mvi c,00
lhld 8500
xchg
lhld 8502
dad d
jnc next
inr c
next: shld 8502
mov a,c
sta 8506
```

o/p

```
8500 25   8504 89
8501 31   8505 B1
8502 64    8506 00(cy)
8503 80
```

A6.4digit bcd addition

```
mvi c,00
lhld 8500
xchg
lhld 8502
mov a,e
add l
jnc loop1
inr d
loop1: sta 8600
mov a,d
add h
jnc loop2
inr c
loop2: sta 8601
mov a,c
sta 8602
o/p
8500  56     8600  46
8501  34     8601  12
8503  90     8603   01(cy)
8504  78
```

A7.subtracton of 16 bt nos

```
mvi c,00
lhld 8500
mov a,e
sub l
jnc loop1
dcr d
loop1: sta 8504
mov a,b
sub h
jnc loop2
inr c
loop2: sta 8505
mov a,c
sta 8506
o/p
8500 36     8504  A2
8504 F4     8505  CB
8502 94     8506  00(br)
8503 28
```

A8.sort array of nos. in asc order

```
mvi d,05
loop3: lxi h,8500
mvi c,05
loop2: mov a,m
inx h
cmp m
jc loop1
mov b,m
mov m,a
dcx h
mov m,b
inx h
loop1: dcr c
jnz loop2
dcr d
jnz loop3
```

A9.multiplication of 2 nos

```
mvi c,08
mvi d,04
xra a
mov b,a
loop: add c
jnc next
inr b
next: dcr d
jnz loop
sta 8600
mov a,b
sta 8601
```

A4.2 nbyte num addition

```
mvi c,04
lxi h,8500
lxi d,8600
xra a
next: ldax d
adc m
mov m,a
inx h
inx d
dcr c
jnz next
mvi a,00
ral
mov m,a
```

A10.'n' decimal num addition

```
mvi c,04
xra a
mov b,a
lxi h,8050
loop: add m
jnc next
inr b
next: inx h
dcr c
jnz loop
sta 8600
mov a,b
sta 8601
```

o/p

```
8050  25
8051  31          8600 200
8052  64          8601  00(cy)
8053  80
```

B1.complement of 16 bit no

```
lxi h,8500
mov a,m
cma
sta 8502
inx h
mov a,m
cma
sta 8503
```

o/p

```
8500   8B
8501   36
```

B2.2's compliment

```
mvi c,00
lda 8500
cma
adi 1
jnc loop
inr c
loop: sta 8501
mov a,c
sta 8502
```

o/p

```
8500  9F   8501 00
```

A5.block transfer

```
lxi h,8050
lxi d,8070
mvi b,0
next: mov a,m
stax d
inx h
inx d
dcr b
jnz next
o/p
8050 09  8070  11  8070 09
8051  12  8071  95  8071  12
8052  24  8072  78  8072  24
8053  56  8073  67  8073  56
8054  23  8074  12  8074  23
```

B3.fibonacci series

```
mvi c,03
lxi h,8500
mov a,m
inx h
mov d,m
loop: add d
daa
inx h
mov m,a
mov a,d
mov d,m
dcr c
jnz loop
```

o/p

```
8100  00
8101  01
```

B4.largest of n numbers

```
mvi c,06
lxi h,8500
mov a,m
dcr  c
repeat: inx h
cmp m
jnc next
mov a,m
next: dcr c
jnz repeat
sta 8600
```

B5.smallest of n numbers

```
mvi c,06
lxi h,8500
mov a,m
dcr  c
repeat: inx h
cmp m
jc next
mov a,m
next: dcr c
jnz repeat
sta 8600
```

B6.sorting array in descending order

```
mvi d,05
loop3: lxi h,8500h
mvi c,05
loop2: mov a,m
inx h
cmp m
jnc loop1
mov b,m
mov m,a
dcx h
mov m,b
inx h
loop1: dcr c
jnz loop2
dcr d
jnz loop3
```