8 bit addition

LDA 8500

MOV B,A

LDA 8501

ADD B

STA 8502

HLT

8 bit sub

LDA 8000

MOV B,A

LDA 8001

SUB B

STA 8002

HLT

8 bit multiplication

MVI A,00

MVI B,06

MVI C,07

LOOP: ADD B

DCR C

JNZ LOOP

STA 2000

HLT

8 bit division

LDA 8501

MOV B,A

LDA 8500

MVI C,00

LOOP: CMP B

JNC LOOP1

SUB B

INR C

JMP LOOP

STA 8503

DCR C

MOV A,C

LOOP1: STA 8502

HLT

16 bit addition

LHLD 2500

XCHG

LHLD 2502

DAD D

SHLD 2504

HLT

16 bit sub

LHLD 2050

XCHG

LHLD 2052

MVI C,00

MOV A,E

SUB L

STA 2054

MOV A,D

SUB H

STA 2055

HLT

16bit multi

LHLD 2050

SPHL

LHLD 2052

XCHG

LXI H,0000H

LXI B,0000H

AGAIN: DAD SP

JNC START

INX B

START: DCX D

MOV A,E

ORA D

JNZ AGAIN

SHLD 2054

MOV L,C

MOV H,B

SHLD 2056

HLT

16bit division

LDA 8501

MOV B,A

LDA 8500

MVI C,00

LOOP: CMP B

JNC LOOP1

SUB B

INR C

JMP LOOP

STA 8503

DCR C

MOV A,C

LOOP1: STA 8502

HLT

Smallest number

LXI H,2050

MOV C,M

DCR C

INX H

MOV A,M

LOOP1: INX H

CMP M

JC LOOP

MOV A,M

LOOP: DCR C

JNZ LOOP1

STA 2055

HLT

Largest number

LXI H,2050

MOV C,M

DCR C

INX H

MOV A,M

LOOP1: INX H

CMP M

JNC LOOP

MOV A,M

LOOP: DCR C

JNZ LOOP1

STA 2055

HLT

Sum of addition

LXI H,8000

MOV C,M

MVI A,00

MOV B,A

LOOP: ADD C

JNC SKIP

INR B

SKIP: DCR C

JNZ LOOP

LXI H,8007

MOV M,A

INX H

MOV M,B

HLT

Decesending order

LOOP: LXI H,3500

MVI D,00

MVI C,05

LOOP1: MOV A,M

INX H

CMP M

JNC LOOP2

MOV B,M

MOV M,A

DCX H

MOV M,B

MVI D,01

LOOP2: DCR C

JNZ LOOP1

MOV A,D

RRC

JC LOOP

HLT

Ascending order

LOOP: LXI H,3500

MVI D,00

MVI C,05

LOOP1: MOV A,M

INX H

CMP M

JC LOOP2

MOV B,M

MOV M,A

DCX H

MOV M,B

MVI D,01

LOOP2: DCR C

JNZ LOOP1

MOV A,D

RRC

JC LOOP

HLT

Factorial number

LDA 2001

MOV B,A

MVI C,#01

MVI E,#01

LOOP: MOV D,C

MVI A,00H

LP: ADD E

DCR D

JNZ LP

MOV E,A

INR C

DCR B

JNZ LOOP

MOV A,E

STA 2010

HLT

Swapping number

LDA 2001

MOV B,A

LDA 2002

MOV C,A

STA 2003

MOV A,B

STA 2004

HLT

Square of number

LXI H,8000

XRA A

MOV B,M

LOOP: ADD M

DCR B

JNZ LOOP

STA 8001

HLT

1 and 2 complement

LDA 5000

CMA

STA 5001

ADI 01

STA 5002

HLT

20.RAL left

MVI A,03

RLC

RLC

RLC

RLC

STA 2001

HLT

Rorate accumulator right

MVI A,05

RRC

RRC

RRC

RRC

STA 2002

HLT