

Homework 4

Assembly Language

1. Write a sequence of instructions to do the following:

Put the sum $1 + 4 + 7 + \dots + 148$ in AX.

.DATA

ANS DW ?

.CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

MOV CX, 49

MOV AX, 1

MOV BX, 1

LOOP_SUM:

ADD AX, BX

ADD BX, 3

MOV ANS, AX

LOOP LOOP_SUM

END_:

2. The following algorithm may be used to carry out division of two nonnegative numbers by repeated subtraction:

```
initialize quotient to 0
WHILE dividend >= divisor DO
    increment quotient
    subtract divisor from dividend
END_WHILE
```

Write a sequence of instructions to divide AX by BX, and put the quotient in CX.

MOV CX,0

CHECK:

```
CMP  AX, BX
JGE  SUBTRACT
JMP  DOS_EXIT
```

SUBTRACT:

```
INC  CX
SUB  AX, BX
JMP  CHECK
```

DOS_EXIT: