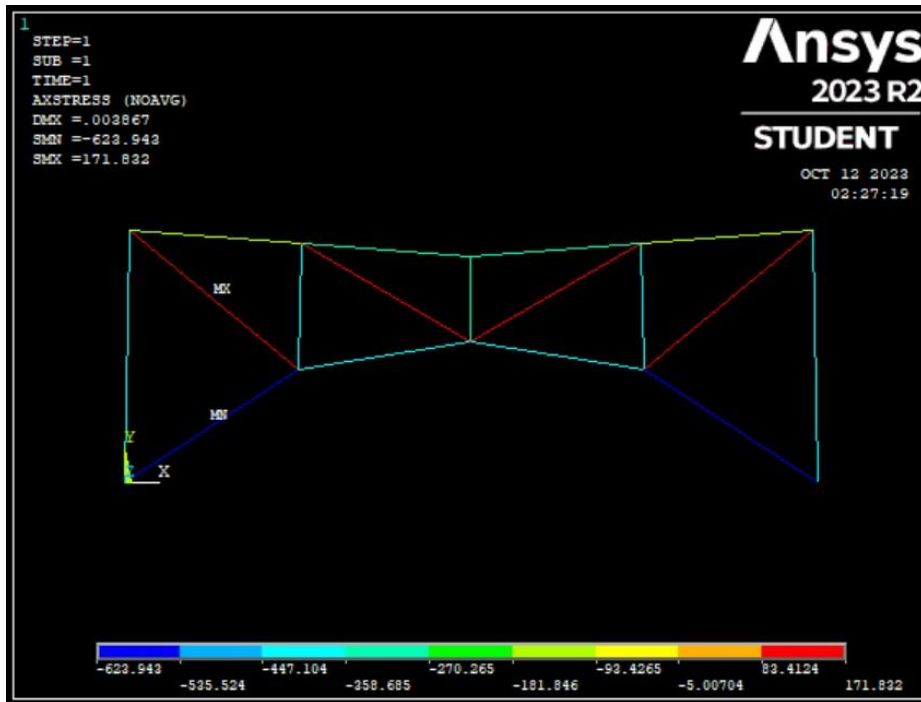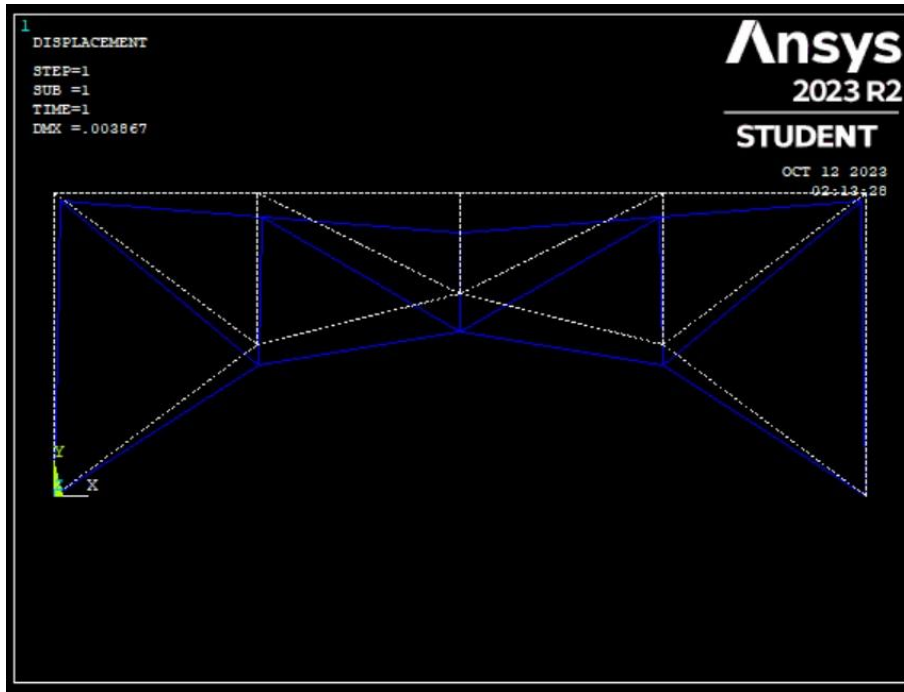## Problem 5

```
PRINT ELEMENT TABLE ITEMS PER ELEMENT

***** POST1 ELEMENT TABLE LISTING *****

    STAT      CURRENT
    ELEM      AXSTRESS
       1     -421.41
       2      171.83
       3     -623.94
       4     -387.04
       5     -137.47
       6     -274.93
       7     -318.31
       8      153.69
       9     -372.82
      10     -274.93
      11     -372.82
      12     -387.04
      13      153.69
      14      171.83
      15     -137.47
      16     -421.41
      17     -623.94

MINIMUM VALUES
ELEM           3
VALUE     -623.94

MAXIMUM VALUES
ELEM           2
VALUE      171.83


PRINT U     NODAL SOLUTION PER NODE

***** POST1 NODAL DEGREE OF FREEDOM LISTING *****

LOAD STEP=     1  SUBSTEP=       1
 TIME=    1.0000       LOAD CASE=     0

THE FOLLOWING DEGREE OF FREEDOM RESULTS ARE IN THE GLOBAL COORDINATE SYSTEM

   NODE       UX            UY            UZ            USUM
      1    0.0000        0.0000        0.0000        0.0000
      2    0.56882E-003-0.87188E-003  0.0000        0.10410E-002
      3    0.37921E-003-0.23589E-002  0.0000        0.23892E-002
      4    0.12418E-003-0.19585E-002  0.0000        0.19624E-002
      5   -0.24068E-018-0.36473E-002  0.0000        0.36473E-002
      6   -0.18191E-018-0.38668E-002  0.0000        0.38668E-002
      7   -0.12418E-003-0.19585E-002  0.0000        0.19624E-002
      8   -0.37921E-003-0.23589E-002  0.0000        0.23892E-002
      9   -0.56882E-003-0.87188E-003  0.0000        0.10410E-002
     10    0.0000        0.0000        0.0000        0.0000

MAXIMUM ABSOLUTE VALUES
NODE            2             6             0             6
VALUE    0.56882E-003-0.38668E-002  0.0000        0.38668E-002
```

/FILNAM,P1-6
/title, P1-6_Truss /prep7
et, 1, link180

! Material 1
mp, ex, 1, 3.e7
mp, prxy, 1, 0.28

r, 1, 3.141592

```
n, 1, 0.0, 0.0, 0.0
n, 2, 0.0, 60.0, 0.0
n, 3, 40.0, 60.0, 0.0
n, 4, 40.0, 30.0, 0.0
n, 5, 80.0, 60.0, 0.0
n, 6, 80.0, 40.0, 0.0
n, 7, 120.0, 60.0, 0.0
n, 8, 120.0, 30.0, 0.0
n, 9, 160.0, 60.0, 0.0
n, 10, 160.0, 0.0, 0.0

! Set properties before creating elements
mat, 1 real, 1
en, 1, 1, 2
en, 2, 2, 3

d, 1, all, 0.
d, 10, all, 0.

f, 2, fy, -1000.
f, 3, fy, -1000.
f, 5, fy, -1000.
f, 7, fy, -1000.
f, 9, fy, -1000.

finish
/solu
antype, static
solve
save
finish
```

Problem 6

```
PRINT U     NODAL SOLUTION PER NODE

 ***** POST1 NODAL DEGREE OF FREEDOM LISTING *****

 LOAD STEP=      1   SUBSTEP=      1
   TIME=    1.0000        LOAD CASE=    0

 THE FOLLOWING DEGREE OF FREEDOM RESULTS ARE IN THE GLOBAL COORDINATE SYSTEM

    NODE        UX            UY            UZ      |     USUM
       1  -0.22857E-002   0.0000        0.0000        0.22857E-002
       2   0.89383E-003-0.95535E-002    0.0000        0.95952E-002
       3   0.0000       -0.98954E-002   0.0000        0.98954E-002
       4   0.0000       -0.10276E-001   0.0000        0.10276E-001

 MAXIMUM ABSOLUTE VALUES
 NODE        1             4             0             4
 VALUE  -0.22857E-002-0.10276E-001   0.0000        0.10276E-001
```

PRINT S   ELEMENT SOLUTION PER ELEMENT

***** POST1 ELEMENT NODAL STRESS LISTING *****

 LOAD STEP=   1 SUBSTEP=   1
  TIME=   1.0000   LOAD CASE=   0

 THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

 ELEMENT=   10   LINK180
   NODE   SX   SY   SZ   SXY   SYZ   SXZ
      1 -0.67082E+008 0.0000   0.0000   0.0000   0.0000   0.0000
      2 -0.67082E+008 0.0000   0.0000   0.0000   0.0000   0.0000

 ELEMENT=   11   LINK180
   NODE   SX   SY   SZ   SXY   SYZ   SXZ
      1 0.60000E+008 0.0000   0.0000   0.0000   0.0000   0.0000
      4 0.60000E+008 0.0000   0.0000   0.0000   0.0000   0.0000

 ELEMENT=   12   LINK180
   NODE   SX   SY   SZ   SXY   SYZ   SXZ
      2 -0.22361E+008 0.0000   0.0000   0.0000   0.0000   0.0000
      4 -0.22361E+008 0.0000   0.0000   0.0000   0.0000   0.0000

 ELEMENT=   13   LINK180
   NODE   SX   SY   SZ   SXY   SYZ   SXZ
      2 -0.44721E+008 0.0000   0.0000   0.0000   0.0000   0.0000
      3 -0.44721E+008 0.0000   0.0000   0.0000   0.0000   0.0000

 ELEMENT=   14   LINK180
   NODE   SX   SY   SZ   SXY   SYZ   SXZ
      3 0.20000E+008 0.0000   0.0000   0.0000   0.0000   0.0000
      4 0.20000E+008 0.0000   0.0000   0.0000   0.0000   0.0000

Problem 7

PRINT ELEMENT TABLE ITEMS PER ELEMENT

 ***** POST1 ELEMENT TABLE LISTING *****

    STAT   CURRENT
    ELEM   AXSTRESS
      1   -67082040.
      2   49081504.
      3   -22360680.
      4   -44721360.
      5   20000000.
      6   -44721360.
      7   -22360680.
      8   49081504.
      9   -67082040.

 MINIMUM VALUES
 ELEM   1
 VALUE   -0.67082E+008

 MAXIMUM VALUES
 ELEM   2
 VALUE   0.49082E+008

 ***** POST1 NODAL DEGREE OF FREEDOM LISTING *****

 LOAD STEP=   1 SUBSTEP=   1
  TIME=   1.0000   LOAD CASE=   0

 THE FOLLOWING DEGREE OF FREEDOM RESULTS ARE IN THE GLOBAL COORDINATE SYSTEM

    NODE   UX   UY   UZ   USUM
      1   0.0000   0.0000   0.0000   0.0000
      2   0.25935E-002 -0.83813E-002 0.0000   0.87734E-002
      3   0.15295E-002 -0.83830E-002 0.0000   0.85214E-002
      4   0.18698E-002 -0.87640E-002 0.0000   0.89612E-002
      5   0.80581E-003 -0.77008E-002 0.0000   0.77429E-002
      6   0.37395E-002   0.13610E-002 0.0000   0.39795E-002

 MAXIMUM ABSOLUTE VALUES
 NODE   6   4   0   4
 VALUE   0.37395E-002 -0.87640E-002 0.0000   0.89612E-002