Homework #6

Exercises for Section 7.2, Exercise 2 (p. 295)

Below are the values of the *A*, *B*, and *D* matrices as computed by the modifications to FORTRAN program *stress.f* as suggested in the Computer Exercise below. The program *stress.f* as it is supplied to adopters of the book is essentially the Computer Exercise below, though the program also considers free thermal strain effects, an issue not yet discussed. It is important to note that with any computer calculation there is likely to be roundoff error. For this laminate no entry in any of the three matrices should be exactly zero.

$[+45/0/-30]_T$ laminate

ABD MATRIX FOR THE LAMINATE, EQ. 7.86

```
         A MATRIX                              B MATRIX

 0.4446E+08   0.1082E+08  -0.1621E+07      0.1011E+04  -0.2029E+03  -0.1859E+04
 0.1082E+08   0.1216E+08   0.3064E+07     -0.2029E+03  -0.6048E+03  -0.1156E+04
-0.1621E+07   0.3064E+07   0.1145E+08     -0.1859E+04  -0.1156E+04  -0.2029E+03


         B MATRIX                              D MATRIX

 0.1011E+04  -0.2029E+03  -0.1859E+04      0.5582E+00   0.2537E+00  -0.3952E-01
-0.2029E+03  -0.6048E+03  -0.1156E+04      0.2537E+00   0.2553E+00   0.7469E-01
-0.1859E+04  -0.1156E+04  -0.2029E+03     -0.3952E-01   0.7469E-01   0.2642E+00
```