$\nu_1 = \nu_2 = 0.3$

$E_1 = E_2 = 206 \times 10^9$

$d_1 = 38$

$d_2 = 70$

$F = 450$

$z = 0.25$

3. Given the vector y=[0,-0.2,0.4,-0.6,0.8,-1.0,-1.2,-1.4,1.6]. If z=sin(y), then:
   a. Determine the minimum and maximum of only the negative values of z.
   b. Determine the square root of only the positive values of z.

4. A. Create a vector of eight values that are equally spaced on a logarithm scale. The first value of the vector is 6 and the last value is 106.
   B. Display the value of the fifth element of the vector created in A.
   C. Create a new vector whose elements are the first, third, fifth and seventh element of the vector created in A.

5. Manipulate the output of magic(5) to produce the following altered matrix:

$$magic(5) = \begin{bmatrix} 17 & 24 & 1 & 8 & 15 \\ 23 & 5 & 7 & 14 & 16 \\ 4 & 6 & 13 & 20 & 22 \\ 10 & 12 & 19 & 21 & 3 \\ 11 & 18 & 25 & 2 & 9 \end{bmatrix} \rightarrow \begin{bmatrix} 17 & 24 & 1 & 8 & 0 \\ 23 & 5 & 7 & 0 & 16 \\ 4 & 6 & 0 & 20 & 22 \\ 10 & 0 & 19 & 21 & 3 \\ 0 & 18 & 25 & 2 & 9 \end{bmatrix}$$

6. One method of finding an estimate of a parameter δ appearing in the Weibull probabilistic density function is obtained from:

$$\delta = [\frac{1}{n}\sum_{i=1}^{n} x_i^{\beta}]^{\frac{1}{\beta}}$$

where x_i are obtained from random sample of size n, and β is a known parameter. If x = [72, 82, 97, 103, 113, 117, 126, 127, 127, 139, 154, 159, 199, 207] and β=3.644, then determine the value of δ. If

$$S_N = \sum_{n=1}^{N} \frac{1}{n^2 + z^2}$$

then

$$S_\infty = \frac{\pi}{2z}\coth \pi z - \frac{1}{2z^2}$$

Determine for z=10 the value of N for which $|S_\infty - S_N| < 3 \times 10^{-3}$.