SHEET #3

1. **Implement a Point class for three-dimensional points (x,y,z). This class includes a set() function to read a point, anegate() function to transform the point into its negative, a norm() function to return the point's distance from the origin (0,0,0), and a print() function. Test this class in main function.**

2. **Implement a Circle class that contains a radius r, includes a Cread() function to read a radius, an area() function to return the area of the circle, and a circumference() function to retain the circumference of the circle. Test this class in main function by using array of the circle objects.**

3. **Implement a Ratio class contain two integer numbers n, and d. This class includes a Rget() function to read (n, d), a convert() function to convert a ratio number into decimal number, a Rprint() function to print the elements in ratio format, and invert() function to inverse $\frac{n}{d}$ into $\frac{d}{n}$. Test this class in main function**

4. **Implement a Matrix class for 2-by-2 matrices:**

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

This class includes a Mread() function to read (a, b, c, d), an inverse () function that returns the inverse of the matrix, a det() function that returns the determinant of the matrix, a function IsSingular() that returns 1 or 0 according to whether the determinant is zero, and a Mwrite() function to print the elements in matrix format. Test this class in main function.