

Assignment 1.

Methods of Submission:

Preferred:

Use Equations Editor in Microsoft Word

OR

Use Scientific Note Book

OR

Use the text editor

OR

Scan your handwritten work

To submit this assignment online

In case, the above is difficult

You may mail your assignment to me by the due date at
Dr. Atul Roy
18154 Truffle Lane
Boyds MD 20841

But make sure that you make it possible to switch to the preferred mode of submission later in the semester.

For the first assignment, please answer the following questions:

1. Use the method of completing the squares to write a standard equation of the sphere given by the following equation. Also, find the coordinates of the center and length of the radius of this sphere.

$$x^2 + y^2 + z^2 + 8x - 10y + 4z + 8 = 0$$

2. i) Find a vector \mathbf{u} with initial point $P(2, -5, 4)$ and the terminal point $Q(5, 1, 2)$.
ii) Find a unit vector in the direction of \mathbf{u} .

3. Find a unit vector in the direction of the tangent line and the normal line to the graph of $f(x) = -x^2 + 5$ at $(1, 4)$

4. Submit the solution of #94 on the page 772.