CMSC 435 / 634 Introduction to Computer Graphics

Homework Assignment 3 (Due 18th before class by email to TA)

- The work must be all your own.
- Be explicit, define your symbols, and explain your steps. (This will make it a lot easier for us to assign partial credit.)

1. (20 points) We did an example in class to calculate the ray sphere intersection. This homework assignment will be similar to that one.

Given a set of parameters defined as the following:

Viewpoint: 5, 4.5, 4, viewDir: -5, -3.5, -4 (therefore, v = normal(5, 3.5, 4));

(1)

Triangle (defined by three vertices): A (0, 0, 10), B (10, 0, -10), C (-10, 0, 10);

(2)

Sphere (defined by center and radius): Center (0, 0, 0), R=1.2.

The viewplane to camera distance is 1 (not really useful in this case);

Calculate whether or not the ray coming from the center of the image plane to the eye will intersect with the triangle or the sphere. Please note that you only need to compute one of the shapes, not both to get full credits.

To submit, please email Anudeep your answer in pdf.