## Homework 2

From the book of Hildebrand, Chapter 6

1. Solve problem 30, 31.

2. Solve problem 35. Show that the unit tangent, normal and binormal vectors satisfy the Frenet equation.

3. Determine the curvature and the torsion of the twisted cubic

$$x = t$$
  $y = \alpha t^2$   $z = \beta t^3$ 

at the point (1,1,1).  $\alpha$  and  $\beta$  are arbitrary constants.

4. Solve problem 45.

- 5. Solve problem 47 in all details.
- 6. Solve problem 55.
- 7. Solve problem 57.