

Tutorial Week 5

MATH3968: Differential Geometry

Semester 2, 2009

Lecturer: Emma Carberry

Required Problems

1. Let a, b, c be nonzero real numbers. Show that the three equations

$$\begin{aligned}x^2 + y^2 + z^2 &= ax, \\x^2 + y^2 + z^2 &= by, \quad \text{and} \\x^2 + y^2 + z^2 &= cz\end{aligned}$$

each define regular surfaces, and that these intersect orthogonally.

c.f. do Carmo §2.4 Q12.

2. Lecture Notes, Exercise Set 4, Q5
3. Lecture Notes, Exercise Set 5, Q5
4. Lecture Notes, Exercise Set 6, Q1

Recommended Problems

5. Lecture Notes, Exercise Set 4, Q4
6. do Carmo §2.4 p88 Q20, Q22