Problem Set 3

Deadline: April 22, 2021

April 8, 2021

Problem 1

Find the intrinsic and extrinsic curvature of the following spaces by the tangent plane method at a point in X-Y plane:

- A space which is defined as an embedded space in a 3d Euclidean space with metric $diag(1, 1, 1)$:

$$X^2 + Y^2 - Z^2 = l^2$$

- A space which is defined as an embedded space in a 3d Minkowski space with metric $diag(-1, 1, 1)$:

$$X^2 + Y^2 - Z^2 = l^2$$