## Exercise sheet 8

Curves and Surfaces, MTH201

- 1. Show that if  $\gamma$  parametrizes a line that lies on a surface, then  $\gamma$  is a geodesic of that surface.
- 2. Prove that  $\gamma$  is a geodesic if and only if its geodesic curvature is 0
- 3. Show that any geodesic in a plane must be a straight line