

These problems from do Carmo:

- 4-4: 6

1. Let S be the cylinder of radius 1 centered on the z axis. Find all geodesics in S connecting the point $(1, 0, 0)$ with the point $(1, 0, 1)$.
2. Give a qualitative description of all the geodesics on the torus $(\sqrt{x^2 + y^2} - a)^2 + z^2 = b^2$. Your answer should cover all possible values of the angular momentum.