Homework Set 2

1. Chapter 3 of do Carmo: 4,5,6,7,8,9,10,11,12,13,14

2. Let $(M, g)$ be a Riemannian manifold. If $f$ is a smooth function on $M$ such that $|\nabla f| \equiv 1$, show that the integral curves of $\nabla f$ are geodesics.