(1) Let H^n be the set $\{(x_1, \dots x_{n-1}, y) \in \mathbb{R}^n |$ such that $y > 0\}$ with the Riemannian metric $\frac{dx_1 + \dots + dx_{n-1}^2 + dy^2}{y^2}$.

Let $2 \leq k \leq n$. Consider the embedding $H^k \to H^n$ given by $(x_1, \dots x_{k-1}, y) \mapsto (x_1, \dots x_{k-1}, 0, \dots, 0, y)$.

Prove that this embedding is totally geodesic.

(2) Let $M^2 \subset \mathbb{R}^3$ be given by $x^2 + y^2 - z^2 = 1$ with the induced Riemannian metric. Compute sectional curvature of M at $p = (1, 1, 1)$.