

# Chapter 1. Surfaces and the Concept of Curvature

**Notation.** We shall denote the familiar three dimensional Euclidean space (traditionally denoted  $\mathbf{R}^3$ ) as  $E^3$ .

**Recall.** The Euclidean metric on  $E^3$  is

$$\|\vec{x}\| = \|(x, y, z)\| = \sqrt{x^2 + y^2 + z^2}.$$