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The mean curvature at $p \in S$ is the average of the signed curvature over all angles θ :

$$H = \frac{1}{2\pi} \int_0^{2\pi} \kappa(\theta) d\theta$$

$$H = \frac{1}{2}(\kappa_1 + \kappa_2) \text{ by Euler theorem}$$

A surface which evolves under the mean curvature of the surface S , is said to obey the heat-type equation called the mean curvature flow ◦

The sphere is the only embeded surface of constant positive mean curvature without boundary or singularities ◦

For a surface defined in 3D space ◦ The mean curvature is related to a unit normal of the surface ◦ $2H = -\nabla \cdot \vec{n}$