

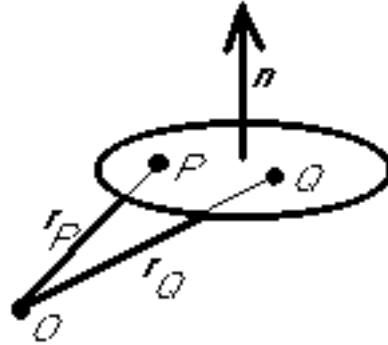
Hyperplanes

A hyperplane in R^n (n -dimensional space) is the collection of points satisfying a single scalar linear equation:

$$a_1x_1 + a_2x_2 + \dots + a_nx_n = d$$

i.e.

$$\vec{n} \cdot \vec{r} = d \quad \vec{n} = (a_1, a_2, \dots, a_n)$$



3D: A plane:

$$ax + by + cz = d$$

2D: A line:

$$ax + by = d$$