Euclidian distance

AJ Smit *University of the Western Cape*

1 Definition

The Euclidean distance between points **p** and **q** is the length of the line segment connecting them ($\overline{\mathbf{pq}}$).

On an Euclidian plane, the position of point **p** is defined by the position (p_x, p_y) and the position of point q is (q_x, q_y). The shortest distance between the points is therefore given by the Pythagorean Theorem

$$d(\mathbf{p}, \mathbf{q}) = \sqrt{(p_x - q_x)^2 + (p_y - q_y)^2}$$