



PLANE DISTANCE

Why

What is the distance between two points in a plane?

Definition

We define the distance between two points in the plane as the length of the line segment connecting them.¹ In terms of their coordinates $(x_1, x_2), (y_1, y_2) \in \mathbf{R}^2$, the *plane distance* of two points is

$$\sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2}.$$

This is sometimes referred to as the *Euclidean distance*. We have thus defined a function mapping $\mathbf{R}^2 \times \mathbf{R}^2$ into \mathbf{R} .

¹This intuition will be expanded in future editions.

