



Math for the people, by the people.

city-block metric

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The *city-block metric*, defined on \mathbb{R}^n , is

$$d(a, b) = \sum_{i=1}^n |b_i - a_i|$$

where a and b are vectors in \mathbb{R}^n with $a = (a_1, \dots, a_n)$ and $b = (b_1, \dots, b_n)$.

In two dimensions and with discrete-valued vectors, when we can picture the set of points in $\mathbb{Z} \times \mathbb{Z}$ as a grid, this is simply the number of edges between points that must be traversed to get from a to b within the grid. This is the same problem as getting from corner a to b in a rectilinear downtown area, hence the name “city-block metric.”