Norm Metrics

1 Why

If we have a norm, then we have a metric.

2 Motivating Result

Let R be the set of real numbers.

Proposition 1. *Let (V, F) be a vector space. Let $f : V \to R$ be a norm. Let $g : V \times V \to R$ such that*

$$g(x, y) = |x - y|.$$

Then g is a metric.

Proof. □