



## PLANE VECTORS

### Why

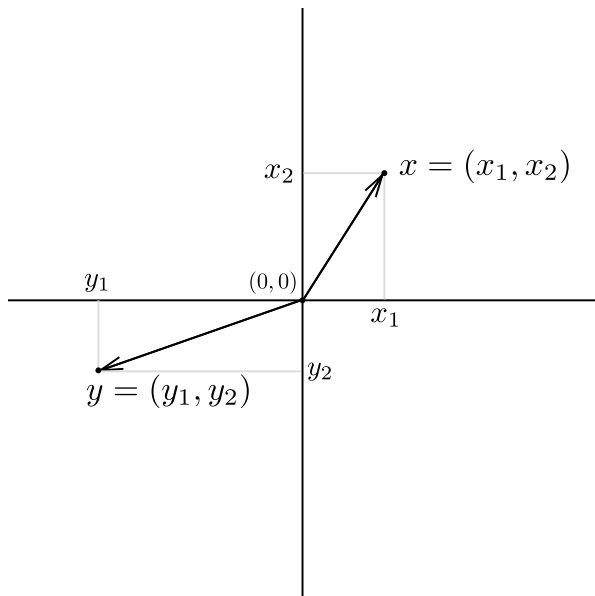
A point in the plane can be *interpreted* as a *displacement*.

### Definition

A *plane vector* (or *vector*, *two-dimensional vector*, *2-vector*) is an element of  $\mathbf{R}^2$ . We associate a list of two numbers with a point in the plane, a *location*. We also associate a list of two numbers with a *displacement*, a *change* in location.

### Visualization

As in plane geometry, pictures are indispensable (though they are not proofs). In the figure, indicate the vectors  $x, y \in \mathbf{R}^2$  on a plane. We have also indicated the origin,  $(0, 0)$ , as usual.



**Note on terminology**

The English word “vector” is from the same Latin word “vector,” meaning, literally, carrier. This sense is from the interpretation of a vector as indicating a displacement.

