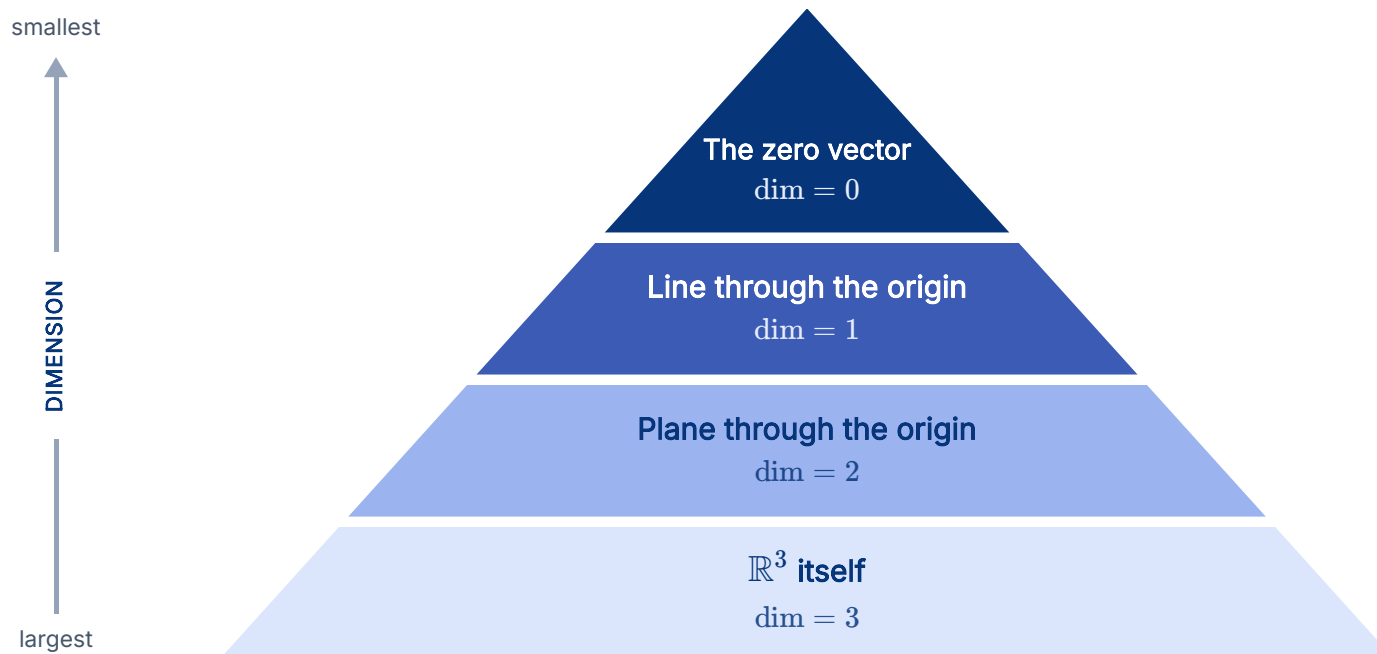


## BEFORE YOU READ

### Subspaces of $\mathbb{R}^3$ by dimension

If  $W$  is a subspace of  $V$ , then  $\dim(W) \leq \dim(V)$ , with equality only when  $W = V$ . In  $\mathbb{R}^3$  that leaves exactly four possible dimensions.



## TAKEAWAY

### Always a whole number

There is no subspace of dimension  $\frac{3}{2}$  or  $\pi$ : dimension is always a non-negative integer. See [subspaces](#) for these four kinds.