Source:

A quotient space is similar to a modulo because both take some subpart of the structure and smoosh it to zero.

1 | looking at V/U

1.1 | set of affine subsets ($\{ v+U : v \in V \})

1.2 | "modding out by U" (a subspace) means it gets collapsed to zero

1.2.1 | could just "call the line zero" or carry the entire thing as an element