Source:

1 | In the context of Linear Algebra (Axler 3.15)

1.1 | #definition injective def

A function $T : V \to W$ is called *injective* if $Tu = Tv$ implies $u = v$

1.1.1 | Properties

1. A map is injective iff it's null space equals $\{0\}$

1.2 | Intuition

$Tu = Tv \implies u = v$ means that if the outputs are the same, then the inputs are the same, aka only one input goes to that one output. That's why it's called "one-to-one"