

## Why are the columns of an invertible matrix l.i.?

Without presuming Theorem 8 in 2.3



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**problematic reasoning:** If the 2 columns of  $A$  are multiples the determinant will be 0

**incomplete reasoning:** the columns of  $A$  are l.i because  $A\vec{x} = \vec{0}$  has only the trivial solution when  $A$  is invertible (why?).