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Christina Pospisil*, pospisil.christina@gmx.de. *Generalization Theory of Linear Algebra I+ II.*

An algorithm for multiplying and adding matrices regardless of dimensions via an embedding and inverses for non-injective mappings in one dimension are presented (this first part of the project Generalization Theory of Linear Algebra I was presented at JMM 2019). Then the talk continues and presents inverses for non-injective mappings in multiple dimensions, inverses for non-surjective mappings in one and multiple dimensions and introduces a general determinant theory (second part was presented at JMM 2020). In future work there will be further operations and applications to physics and other natural sciences be explored. (Received August 06, 2020)