

Math 324 Homework 9

YOUR NAME

Due 4/29/20

Submit well-organized solutions to the following exercises. You may work together however you MUST NOT copy one another. Your final submission MUST be written in your own words. It is unacceptable and unethical to look up the answers online.

1. List the names of all people (students, TA's, Professors) with whom you spoke about this assignment. There are no restrictions for how many people you spoke to and no negative repercussions to just chatting. **You're encouraged to fill this space up.
name 1, name 2, ...
2. Let A be an $m \times n$ matrix. Prove that if $\vec{x} \in N(A)$, then $\vec{x} \in N(A^T A)$ as well.

Proof. The matrix does the things.

□

3. Prove that $\|\vec{u} + \vec{v}\| = \|\vec{u}\| + \|\vec{v}\|$ if and only if \vec{u} and \vec{v} have the same direction (the angle between them is 0).

Proof. It is what it is.

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