



MATH PROBLEM OF THE WEEK

Spring 2022

Problem 7

Let $\vec{v}_1, \vec{v}_2, \vec{v}_3, \vec{v}_4, \vec{v}_5$ be nonzero vectors in \mathbb{R}^3 . Show that the dot product $\vec{v}_i \cdot \vec{v}_j$ is nonnegative for some $1 \leq i < j \leq 5$.

We welcome solutions from everyone. The undergraduate participant from the NMSU main campus with the most correct solutions at the end of the semester will receive an award of \$500.

Solutions must be mathematically rigorous and originally obtained by the participants. Participants will be notified if their solutions are correct within a week.

Deadline: Monday, April 11, 10 am

Send solutions to: mathpotw@nmsu.edu

More information at: <https://math.nmsu.edu/activities/math-problem-of-the-week.html>