

Problem of the week #6

Due February 28th

Suppose two planes (in 3D space) intersect at an acute angle ϕ and are spanned by pairs of vectors \mathbf{A}, \mathbf{B} and \mathbf{C}, \mathbf{D} respectively.

Problem. Show $\cos \phi$ may be expressed in terms of the ten possible dot products between the four vectors $\mathbf{A}, \mathbf{B}, \mathbf{C}, \mathbf{D}$.

Hint. Consider cross product identities.

- Partial credit may be given for partial answers.
- Each POW will be due the following week at 1pm.
- Questions? Email: bthorner@unomaha.edu
- Submit solutions to (above email), DSC 210, or DSC 203.
- POWs, solutions, backgrounds, leaderboard available at

<https://www.unomaha.edu/college-of-arts-and-sciences/mathematics/student-opportunities/pow.php>