

Problem of the week #5

Due February 21st

Problem. Consider the following double integral:

$$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \exp [- (Ax^2 + Bxy + Cy^2)] dx dy.$$

- (a) For what (A, B, C) does the double integral exist?
- (b) Find a formula for it in terms of A, B, C .

- 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>