MATH-UA 263 Partial Differential Equations
Recitation Summary

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Topics: verifying solution to a PDE, dispersion relations, well-posedness, general solution via integration.

1. Verify general solution to the heat equation (EPDE, Exercise 1.6).
2. Solution to the heat equation with $g(x) = e^{-x}$ (Strauss p51-52).
3. Viscous Burgers' equation, Cole-Hopf transformation (EPDE, Exercise 1.7).
4. Dispersion relation: $u_t = -u - \delta u_{xx} - u_{xxxx}$, $\delta > 0$.
5. Well-posedness: $v_{tt} + v_{xx} = 0$ vs. $v_{tt} - v_{xx} = 0$.
6. A general solution of $u_{xt} + 3u_x = 1$.