

# Math 330 Reading Questions

Chapter 1

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 NAME

*Answer the following questions as you read the textbook. This sheet will be collected at the beginning of class on Tuesday. Your responses will be graded for completeness.*

1. What are the three essential linear second-order partial differential equations?
2. What physical phenomena do the Navier-Stokes equations describe?
3. What does it mean if a solution is of “class  $C^n$ ”?
4. How is a *Dirichlet boundary condition* different from a *Neumann boundary condition*?
5. What is the *Superposition Principle* for homogeneous linear equations?
6. What physical phenomena is modeled by the equation  $v_t - v_{xx} = f(t, x)$ ? What does each variable and function in this equation represent?