Chapter 7 Review Questions

1. List some reasons for using a numerical method instead of an analytical method for solving a boundary value problem. Give some illustrative examples.

2. Write out the formula for the replacement equations for $\frac{du}{dx}$ and $\frac{d^2u}{dx^2}$.

3. What is numerical instability? How does it differ from resonance or other growth inherent in a boundary value–initial value problem?

4. Write out the formula for the replacement equations for the Laplacian operator $\nabla^2 u$ on a square grid.