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4.2.2 Problem Set: Instructions

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The computational methods we will focus on in this problem set will be:

- Gaussian elimination to solve linear systems of equations
- Newton's method to solve nonlinear systems of equations (which will require the use of Gaussian elimination!)
- Implicit methods to solve stiff, nonlinear IVP (which will require the use of Newton's method and hence Gaussian elimination!)

We will use a couple of different problems to demonstrate the application of these methods:

- Heat transfer analysis of a large building (in fact, a residence hall that might look familiar... see [Figure 4.8](#))
- Autocatalytic reaction which produces a very stiff IVP



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