You are encouraged to discuss this assignment with other students and with the instructors, but the work you hand in should be your own. The web page

http://www.math.rutgers.edu/courses/251/Maple/Lab1/Vectors.html

can help you with this assignment; to find it, follow the “Maple in Math 251” link on the the Math 251 course webpage. There is also a link to this website in this folder on Sakai.

A website will be posted listing individualized data for each student. For this lab, the data will consist of coordinates for three points, $p$, $q$, and $r$, in $\mathbb{R}^3$. Then $\vec{pq}$ will denote the vector directed from $p$ to $q$ and $\vec{pr}$ will denote the vector directed from $p$ to $r$. The vector $\vec{v}$ will be $\vec{pq} \times \vec{pr}$, the cross product (vector product) of the two vectors. $T$ will be the triangle in $\mathbb{R}^3$ whose vertices are $p$, $q$, and $r$.

Use Maple to compute $\vec{pq}$, $\vec{pr}$, and $\vec{v}$. Use Maple to sketch these three vectors and the triangle $T$ in one picture.

This assignment is due February 12, 2015 in recitation. Late submissions will not be accepted.

Please hand in a printout of all Maple instructions that you use. You can NOT turn in this assignment electronically.

- All pages should be labeled with your name and section number. Also, please staple together all the pages you hand in.

- You should clean up your submission by removing the instructions that had errors.

The work that you hand in should include:

1. A printout of all Maple instructions you have used. Identify clearly in your printout the components of the vectors $\vec{pq}$, $\vec{pr}$, and $\vec{v}$. (These identifications can be done “by hand” on your printout. That is, you can print out the Maple document, then write the identification on the document afterwards.)

2. A printout of a picture of the three vectors and the triangle $T$. The picture should include labeled axes and should show the geometry of the situation well. Label the points $p$, $q$, and $r$ in your picture. Label the vector $v$ in your picture. Label the triangle $T$ in your picture. (These labels can be done “by hand” on your printout.)