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**Math 1050**

**Project 1 – Reflection**

Project 1 was intended to find a solution to a real world solution. It was nice to be able to tie in all of the theorems and techniques learned thus far and solve a problem that I’m sure someone has been presented with in a real situation. The problem was to take a single sheet of cardboard (8.5” x 11”) and cut a square out of each corner to allow a box to be formed by folding the side walls up that were formed by removing the squares from each corner.

I started the project by first giving myself a visual aide for what I was doing. I drew a picture of the cardboard sheet to scale. I then added the corners in and represented them with the variable x. This made it very easy to find the length, width, and height of the box after the corners had been removed. I then used the Rational Zero Theorem to decide on possible zeros of the equation. I was glad to see that I would have to test very many of them as there were quite a bit of options. After I found the first zero (1/2) I was able to use the results from Synthetic Division to get a depressed equation which allowed me to find another zero of the equation (3).

After having found two of the possible three zeroes I had enough information to figure out the rest of the factored equation. I used this information along with a couple of tests on the results to determine that an 8.5” by 11” piece of cardboard will yield a 37.5 cubic inch cube when you cut a square from each corner that ranges from .5” to 3”.