LAB EXERCISE #6 MS EXCEL: GOAL SEEK

This lab is due no later than your lab session the week of 12 through 15 October

Before you start, copy the following file to your personal storage disk: GoalSeek.xls (this is an Excel file to be used in this exercise). Now open it, it is what we are using.

You also need to spend some time to study the Excel online help about goal seek and formula. You will need to pay attention to how to structure a computer formula, especially formula logic and parentheses placement if you don’t already know it.

DESCRIPTION:
In this exercise you will use Excel’s Goal Seek command to find answers for the questions listed below. It is located in the Data / Data Tools / What if portion of the spreadsheet. A worksheet named GoalSeek.xls has been set up for you to use to solve Question 1. In the last cell of the table you need to enter the formula that will produce the total value. Next you will use Goal Seek to solve questions 1 and 2. Question 3 requires you to build a new table.

Q1. City X is working on its budget to improve and expand its current 26-mile bike trail system. The city planners have determined that it will cost $6,700 per mile to improve the existing and $23,500 per mile for any new additional bike trail construction.

The city council has proposed allocating $250,000 to this project, how many miles of new bike trail can be added to the existing bike trail system?

Steps:
You will use the Goal Seek option to solve for this scenario. Like in Lab 5, copy the answer table off to the side in your worksheet for formatting and inserting into a Word document (note: you will submit a hardcopy of your Word document for this exercise)

ALSO, you will next go to the Formulas tab. You will next click Show Formulas. This creates a table that shows me that you did the formulas and just didn’t do the answer manually. You will also copy this table and attach it as an appendix page to your Word document so that I can see your work.

When you get done with copying the formula table, go back and un-click Show Formulas because you will use this table one more time for Question 2.
Please follow the same procedure as you have done in Q1 to complete the rest of the questions. For question 3 you will have to set up your own worksheet so that you can use the *Goal Seek* command to find the answer. You still need to copy the necessary cell range first as a table in your memo containing the answer, and next with the *Formula* option checked to include in your appendix so that I can see your formula.

**Q2. You will use the same table as Q1.**

A city councilor is adamant that the city should spend much more on bike trails and has proposed a budget for the project of $800,000. You are now simply changing the budget amount from $250,000 to $800,000 in your Goal Seek table to answer how many more new miles of bike trail could be built with this much more money.

**Q3. This will require you to build a new table in Excel. Here are the pertinent data:**

City Y’s population is expected to grow from 42,000 in 2006 to 51,500 in 2010, given recent growth patterns. The city is thinking about annexing some adjacent land for new residential development.

Currently, the town has a total of 3,728 acres zoned for residential use, and the net housing density (in its residential zone) is 5.2 units per acre. Assume that

(1) the city wants to control the density to be exactly at 5.5 in 2010, and

(2) the expected average household size (persons per household) for all of the new houses is 2.13 persons.

Given these conditions, how much residential land should the city annex?

These are the facts that you will have to know to make this work:

- How many housing units are currently in the city.
- How many new housing units the city will need.
- The data needed to calculate housing density (this will be your formula)

**WHAT TO PREPARE:**

Please use Word to prepare a memo that gives the answer to each question. A simple sentence will do. Below that sentence, please put the nicely formatted table. There will be three nicely formatted tables and three one-sentence answers or statements of finding. You will also copy your formula tables into an appendix sheet.

Make sure that your tables (cell range) in your memo are understandable and easy to read. Give your memo a professional look using the formatting techniques you have learned in Word and Excel.