# Lab #5

Name:_____

September 26, 2012

MATH 141.200

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The is due at the start of lab on **October 3, 2012**. You will have to turn in the lab page with the answer as well as mail me a copy of the spreadsheet.

The spreadsheet can be saved in the open office(libre office) format or in the Microsoft Excel format. To save as an excel file: click on **File**, select **Save As**, enter the name, change the type from ODF Spreadsheet to an excel format, and then click on save.

**Note: These commands work for the open office spreadsheet. They might have to be adjusted for the Microsoft Excel program.** Use a spreadsheet help files for an explanation of the syntax of a command.

Some commands that may be usefull.

**combin(count1, count2)** will compute the combination where count1 is the number of items to select from and count2 is the number of items selected.
Example
=COMBIN(3;2) returns 3.

**permut(count1, count2)** will compute the permutation where count1 is the number of items to select from and count2 is the number of items selected.
Example
=PERMUT(3;2) returns 6.

The term **range** refers to a set of cells being referenced. A1:C7 means all of the cells that form the rectangle from A1 down to C7. If you plan on copying a formula and you want the range to stay the same then reference by $A$1:$C$7.

**sum(range)** will add the numbers in the cells in the specified range.
Example
=SUM(A1;A3;B5) calculates the sum of the three cells.
=SUM (A1:E10) calculates the sum of all cells in the A1 to E10 cell range.

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**Enter your name in cell A1**.

Work each problem on a different sheet(page) of the spreadsheet.

A spreadsheet has two advantages when doing computations. The first is the ability to copy formulas. The second is the ability to quickly change a number and have the calculation recomputed.

In this lab you want to use the spreadsheets ability to reference cells, to compute how many ways this sample can be created. Your sheet should have the ability to change the number of the balls in the box and have a new computation done WITHOUT retyping a formula.

Problem 1: Create a table that gives the following information. Note: Labels are very nice to have in the table.

You are going to selest a sample of balls from a box that has both red and green balls. The number of each color and the size of the sample are indicated above the following tables.

Compute the following and record the results.

Box has: 6 red and 7 green. Sample size = 5.

| number of red in the sample | exactly 2 | exactly 3 | exactly 5 |
|---|---|---|---|
| number of outcomes: | | | |

Box has: 8 red and 12 green. Sample size = 7.

| number of red in the sample | exactly 5 | exactly 6 | exactly 7 |
|---|---|---|---|
| number of outcomes: | | | |

Problem 2: Work this problem on Sheet 2.
Create a table that gives the following information: A sample of 12 balls are to be selected. How many ways can this be done with at least 6 red balls selected?
Compute the following and record the results.

| number of items in the box | 12 red 10 green | 15 red 20 green |
|---|---|---|
| number of ways to get at least 6 red: | | |

Problem 3: Work this problem on Sheet 3.
A box has a total of 8 red balls, 7 green balls and 4 purple balls. A sample of 10 balls are to be selected. How many ways can this be done with at least 4 red balls and at least 3 green balls are selected?

Answer: _____