**Name: MASTER E ☺**

Permutations & Combinations Homework

**#1-3: Review mean, median, & mode with the given set of numbers: {0, 0.5, 1, 5, 0.75, 2, 0.25, 3}**

1. Find the mean. **2)** Find the median. **3)** Find the mode.

**12.5 divided by 8 = 1.5625 (.75 + 1) divided by 2 = .875 NONE**

**#4-6: Evaluate each using the calculator.**

**4)** 8! **5)** 19C7 **6)** 14P10

**40,320 50,388 3,362,428,800**

**#7-12: Solve each problem. Show the work you used to derive your answer (*write what you typed in the calculator*).**

1. A restaurant offers a “Pick 3 Combo” lunch. Diners can choose from four soups, two salads, and three beverages. How many different meals are possible?

**4 times 2 times 3 = 24**

1. Of fifteen employees, a store manager must assign one employee to work the stockroom, one employee to work the cash register, and one employee to greet customers. How many ways are there to choose three employees from the 15 employees?

**15P3 = 15! divided by 12! = 15 times 14 times 13 = 2,730**

1. Caroline can fit four textbooks in her backpack. If she has eight textbooks, how many different four textbook loads are possible?

**8C4 = 8! divided by (4! times 4!) = (8 times 7 times 6 times 5) divided by (4 times 3 times 2 times 1) = 70**

1. There are nine runners competing in a race. How many different outcomes are possible for 1st, 2nd, and 3rd place?

**9P3 = 9! divided by 6! = 9 times 8 times 7 = 504**

1. George has twelve good friends but can only invite four friends to see a rock concert with him. In how many ways can he select the four friends to invite?

**12C4 = 12! divided by (4! times 8!) = (12 times 11 times 10 times 9) divided by (4 times 3 times 2 times 1) = 495**

1. A total of fourteen people are running for seats on the city council. Exactly five will win. How many different councils can be created?

**14C5 = 14! divided by (5! times 9!) = (14 times 13 times 12 times 11 times 10) divided by (5 times 4 times 3 times 2 times 1) = 2002**

**#13-14: Create your own word problem on the back. Write out the work and solution to each problem.**

1. Permutation Example **14)** Combination Example

**These is for you to make up. I hope you were creative!**