<u>Quiz #5 Combinations Part 2</u>   Name:_____

Block:_____

1. Ten college students, including a married couple, are eligible to attend a national conference. Four students can attend, and the married couple will only go as a pair. How many different possibilities are possible?

$$_8C_2 \times {}_2C_2 \quad + \quad {}_8C_4 \times {}_2C_0$$

Married   no Married

_____98_____

2. Twelve students, consisting of <mark>5 men</mark> and <mark>7 women,</mark> apply for a job. In how many ways can <mark>4 identical jobs</mark> be awarded amongst the students if:

a) 2 men and 2 women must be hired?

$$\left({}_5C_2 \times {}_7C_2 \right)$$
Men   women

210
_____

b) at least 2 jobs must go to women?

$$\left({}_7C_2 \times {}_5C_2 \right) + \left({}_7C_3 \times {}_5C_1 \right) + \left({}_7C_4 \, {}_5C_0 \right)$$

2w   3w   4w

420
_____

3. In a regular heptagon (7 sides), how many triangles can be made using the vertices of the heptagon?

$$_7C_3$$

_____35_____

4. A softball league has 8 teams. During the season, each team plays each of the other teams exactly 3 times. What is the total number of games played by all teams?

$$_8C_2 = 28 \times 3 = 84$$

once

A B C D E F G H

7   3
6   2
5   1
4