**Data Management (MDM4U)**

**Unit 1 (Chapter 2 and 3) Combination and Pascal Triangle Assignment**

Name: Date:

Knowledge: / Application: / Thinking: / Communication: /

**Knowledge**

1. The expression $\frac{n!}{\left(n-2\right)!}$ is equivalent to:
2. $n^{2}$
3. $\frac{1}{n^{2}-1}$
4. n
5. (n+1)!
6. Write in factorial form
7. 3C2  x 7C4
8. (n-2)! / (n-2)
9. 7C3  x 4! x 3P2
10. Calculate the sum of the first four terms of diagonal 5. Find this value using Pascal triangle an Combination.

**Application**

1. How many arrangements of the Mississippi are there? Use Permutation for this question.
2. The second section of Mathematics paper contains 7 questions and a candidate must answer any 4 questions. In how many ways can the 4 questions be chosen (without regard to order)?
3. Calculate the number of ways in which a. 5 children can be divided into groups of 2 and 3b. 9 children can be divided into groups of 5 and 4. Hence calculate the number of ways in which 9 children can be divided into groups of 2, 3 and 4.
4. Find how many pathways are there from B to C if you are supposed to move south and east from B to C only?



**Thinking**

1. Four people are needed to help at a party. Determine the probability that you and two of your three friends will be chosen for this job if four people are randomly selected from a group of 12.
2. Expand using combination and Pascal Triangle.

(2x -2y)5

**Bonus:**

The solution to nC4 /n-2C2  is (Show your work)

1. N=2
2. N=3
3. N=4
4. N=5