Math 4 Honors Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lessons 5-4 & 5-5 Learning Check Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In this learning check you will be assessed on the following objectives:

* *I can use counting methods to determine probabilities.*
* *I can apply connections among combinations*, *Pascal’s triangle*, *and expansions of binomial expressions of the form* (*a* + *b*)*n.*

**Directions: Answer the questions below – silently & individually. When you are done, enter your answers into the *N*-spire document. You have 15 minutes to complete this.**

1. Fifty people bought tickets for a local raffle. The tickets are placed in a large bowl from which prize-winning tickets are randomly drawn one at a time. Five prizes are to be given away. The nine members of the Jones family each bought one ticket. ***Round your answers to three decimal places.***

1. If a winning ticket is put back in the bowl after it is drawn, what is the probability that no prize is won by a member of the Jones family?
2. If a winning ticket is not put back in the bowl after it is drawn, what is the probability that no prize is

won by a member of the Jones family?

1. Suppose a winning ticket is not put back in the bowl, and people not in the Jones family win the first two prizes. What is the probability that no prize is won by a member of the Jones family?

2. Expand using Pascal’s Triangle.

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3. Expand using the Binomial Theorem.

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4. Find the coefficient of the  term in .

5. Find the coefficient of the  term in .