

Permutations, Combinations, and Counting Principles

Counting Principles	My Lottery Ticket
<p>Warm-ups: A lottery will occur where three numbers are drawn from a bag containing six numbers. Find the total number of different ways that the three balls could be drawn...</p> <ol style="list-style-type: none"> 1. With Replacement 2. Without replacement where the order of the numbers matters 3. Without replacement where the order of the numbers does not matter 	<p>Your Pre-Calculus class will be having a series of lottery drawings. In order to participate, you will need a 3-digit lottery ticket.</p> <p><u>My Lucky Ticket:</u></p> <p>_____</p> <p>(1st number) (2nd number) (3rd number)</p> <ul style="list-style-type: none"> • 1st Number: select a number from 1 to 6. • 2nd Number: select a number from 1 to 6 that is different from your 1st number. • 3rd Number: select a number from 1 to 6 that is different from your 1st number and your 2nd number.
Permutation	Combination
<p>To win the first drawing, you must match all 3 numbers in the exact order that they are drawn. For example, the ticket 4-1-6 would only win if the numbers drawn were 4-1-6. Your teacher will draw the numbers using a die or a random # generator.</p> <p>First Drawing - Winning Numbers:</p> <p>_____</p> <ul style="list-style-type: none"> • Did you win? Did anybody in your class win? • Find the total number of different lottery tickets that could be generated for this drawing by using the correct formula. 	<p>To win the second drawing, you must match all 3 numbers that were drawn in any order. For example, the ticket 4-1-6 would win if the numbers drawn were 1-6-4. Your teacher will draw the numbers using a die or a random # generator.</p> <p>Second Drawing - Winning Numbers:</p> <p>_____</p> <ul style="list-style-type: none"> • Did you win? Did anybody in your class win? • Find the total number of different lottery tickets that could be generated for this drawing by using the correct formula.