

Stats

Counting Techniques

Quiz Review 2

1. Make a tree diagram or a systematic list to show all possible outcomes of flipping 3 coins at once.
2. Using the results of #1, find the number of each of the following outcomes:
 - a) exactly 2 tails
 - b) at least 2 tails
 - c) no more than 2 tails
3. The house salad at a restaurant can be topped with any or all of the following toppings: Croutons, 3 different dressings, bacon bits. How many choices are there?
4. When telephone area codes were first introduced, the only middle digits used were 0 and 1. Also, 0 was never used as a first digit. How many area codes were possible?
5. There are currently 31 teams in the NHL. In how many ways can the pennants of any 5 teams be hung up?
6. Explain $8!$
7. Calculate each by hand. Show expansion, cancellations, etc.
 - a) 7P_3
 - b) 4C_2
8. Write out Pascal's Triangle through row 8. Explain how to find 5C_4 using Pascal's Triangle.
9. Expand $(2c + d)^6$ using the Binomial Theorem.