

Math 301 Homework3

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1. Suppose you live in a world that has \$1, \$2, and \$3 bills only. Determine the number of ways to create \$ n out of these bills.

For example, if $n = 5$, there are 5 ways: all 1s, three 1s and a 2, two 1s and a 3, one 1 and two 2s, or a 2 and a 3.

You may use a computer algebra system to perform partial fraction decomposition if you would like.

2. You have n cards. You would like to split them into an even number of subsets, ordered as Set 1, Set 2, etc. In each subset, you arrange the cards in a line, and then in each line, turn 3 cards sideways. Find a generating function for the number of ways this can be done. Explain why you chose an ordinary or exponential generating function (whichever one you did).
3. Generating Functions problem (from Master list) 6
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