

6.5 Generalized Permutations and Combinations

6.5 pg 432 # 1

In how many different ways can five elements be selected in order from a set with three elements when repetition is allowed?

6.5 pg 432 # 7

How many ways are there to select three unordered elements from a set with five elements when repetition is allowed?

6.5 pg 432 # 9

A bagel shop has onion bagels, poppy seed bagels, egg bagels, salty bagels, pumpernickel bagels, sesame seed bagels, raisin bagels, and plain bagels. How many ways are there to choose

- b) a dozen bagels?
- d) a dozen bagels with at least one of each kind?
- e) a dozen bagels with at least three egg bagels and no more than two salty bagels?

6.5 pg 432 # 15

How many solutions are there to the equation

$$x_1 + x_2 + x_3 + x_4 + x_5 = 21,$$

where $x_i, i = 1, 2, 3, 4, 5$, is a nonnegative integer such that

- a) $x_1 \geq 1$?
- b) $x_i \geq 2$ for $i = 1, 2, 3, 4, 5$?

6.5 pg 433 # 31

How many different strings can be made from the letters in *ABRACADABRA*, using all the letters?