

Bell Work

1. There are 5 finalists in the Mr. Rock Hill pageant. In how many ways may the judges choose a winner and a first runner-up?
2. A multiple choice test consists of 15 questions, each permitting a choice of 5 alternatives. In how many ways may a student fill in the answers if they answer each question?
3. How many distinguishable permutations are there of the letters in the word "greet"?

****Combinations: Order doesn't matter**

$${}_nC_r = \frac{n!}{(n-r)!r!}$$

How can you choose 5 cards from a 52-card deck?

How can you choose 5 cards the same color from a 52-card deck?

****When working with events:**

Both: A and B Multiply the events

One or the other: A or B Add the events

William Shakespeare wrote 38 plays that can be divided into 3 genres. Of the 38 plays there are 18 comedies, 10 histories, and 10 tragedies.

How many different sets of exactly 2 comedies and 1 tragedy can you read?

How many different sets of exactly 3 tragedies or 2 histories can you read?

How many different sets of at most 3 plays can you read?

During the school year, the girls basketball team is scheduled to play 12 home games. You want to attend at least 3 of the games. How many different combinations of games can you attend?

Find the number of possible 5-card hand that contain card specified. The cards are taken from a standard 52-card deck.

- 1) 5 face cards
- 2) 4 kings and 1 other card
- 3) 1 ace and 4 not aces
- 4) 5 hearts or 5 diamonds
- 5) At most 1 Queen out of the 5 cards
- 6) At least 1 spade