**PERMUTATION OR COMBINATION??? THAT IS THE QUESTION! ☺**

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| 1. Of 12 possible books, you are taking 4 with you on vacation. How many collections of 4 books can you take? | 1. How many possible arrangements of 6 coloring books on a shelf are there? |
| 1. How many different ways are there to draw 6 cards from a standard deck of 52 cards? | 1. A company has divided a state into eight regions.   It wishes to test a product in three of these regions.    How many different ways are there to select these three regions? |
| 1. In Rapid City South Dakota, there are 10 dogs racing for first and second prize.   How many possible outcomes are there? | 1. Six speakers are scheduled to address a group of College students.   In how many different orders can the speakers appear? |
| 1. Twenty applicants for a secretary position are to be interviewed to narrow the list of candidates to the top five.    How many possible results are there if the top five are ranked in order of preference? | 1. Twenty applicants for a secretary position are to be interviewed to narrow the list of candidates to the top five.    How many possible results are there if the top five are unranked? |
| 1. A five member committee is to be selected from among four Math teachers and five English teachers. In how many different ways can the committee be formed if the committee must consist of 3 Math teachers and 2 English teachers. | 1. In how many different ways can the letters of the word HOUSE be arranged?   b) In how many ways can the  letters of the word CLASSROOMS  be arranged? |

ANSWERS:

1. 12C4 = 495
2. 6P6 = 720
3. 52 C 6 = 20358520
4. 8 C 3 = 56
5. 10 P 2 = 90
6. 6 P 6 = 720
7. 20 P 5 = 1860480
8. 20 C 5 = 15504
9. (4 C 3) (5 C 2) = 40
10. 5 P 5 = 120; 10!/(3!2!) = 302400