Mixed Problems #1

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Name: _____

Period:

1) A shelf contains 6 English books, 4 math books, and 3 history books and they are all different. There are a total of 13 books. How many ways can you arrange these books on a shelf?

2) For the books in problem #1, how many ways can you arrange the books on a shelf if the books are arranged "by subject"?

3) Captain Steel wants to break into Lord Plague's e-mail account to prevent a disaster. He knows Lord Plague's password uses some arrangement of the phrase "totaldomination." How many arrangements of the phrase are possible?

4) How many arrangements of the word "logizomechanophobia," which means the fear of computers, are possible?

5) Seven people are about to sit in a circle. How many unique possible arrangements are there?

6) For a raffle, 150 tickets were sold, how many ways can four $20 prizes be awarded?

7) Fifteen people entered into a chess match. How many ways can contestants end in 1st place, 2nd place, and 3rd place?

8) A 12-sided die and an 8-sided die are rolled together. What is the probability that their sum is 12?

9) Joey had a 5-question true or false quiz to take. How many possible ways are there to answer such a quiz?

10) Calculate the number of 3-digit numbers that contain no '5' digits.

Answers:

$_{15}P_3$ $13!\ or\ _{13}P_{13}$ $\frac{19!}{4!2!2!2!}$ 2^5 $\frac{15!}{3!3!2!2!2!}$

$\frac{8}{96}\ or\ \frac{1}{12}$ $6!$ 648 $6!\ 4!\ 3!\ 3!$ $_{150}C_4$