Discrete Math
Quiz 9

Name:_____

You have 10 minutes to complete this quiz. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. How many "words" (= strings) may be formed with a 26-letter alphabet if

   (a) words must consist of 5 distinct letters.

   $$(26)_5 = \frac{26!}{21!}$$

   (b) words must consist of 5 letters, which need not be distinct.

   $$26^5$$

2. Give an example of a counting problem whose solution is $m! + n!$.

Suppose you have two envelopes, each filled with slips of paper. The first envelope has m slips of paper on which are written distinct numerical digits, and the second envelope has n slips of paper on which are written distinct letters. You must choose one envelope (only) and order the slips of paper inside. How many outcomes are there? (Answer: $m! + n!$.)