Permutations and combinations Follow-up NAME:

These problems were written by fellow students for question #10 on the worksheet "Permutations and combinations". The question asked for two problems, one using permutations and the other using combinations. I copied the questions exactly as parts *a* and *b* below. Solve the problems as they stand. Also, denote any issues you see with the problems as they are written. Remember that one problem is supposed to use permutations and one problem is supposed to use combinations.

	Problem	**Solution**	**Issues**
Pair #1	a. There are four siblings Ally, Brad, Cara, and David. They are eating breakfast and there are only two pieces of bacon left. Find the number of ways that two of them will get the bacon that is left.		
	b. From the four siblings two will be picked to be given more bacon. Makes no difference who is chosen first or second. Number of ways two people get the bacon.		
Pair #2	a. Five dogs are being shown this Saturday in a dog show. Find the number of ways the dogs may be ordered in the show?		

Problem		Solution	Issues
	b. Of these five dogs, awards will be given for 1^{st}, 2^{nd}, and 3^{rd} places. How many ways can the five dogs be grouped in the winner's circle?		
Pair #3	a. There are six people in a pie eating contest, Allan, Bob, Carol, Dylan, Ethan, and George. Find the number of ways that three of them can be selected to win 1^{st} and 2^{nd} places. Use their initials to write out the possibilities.		
	b. From the six people listed above, three will be selected to attend a bakery for a tour. It makes no difference in the order they are chosen. Find the number of ways we could choose two people to go to the bakery. In the above list, cross out the possibilities that are repeats if we want only the combinations to solve.		