Humke’s It’s a New Beginning 252
Work Sheet 12

1. Complete Caley Tables for $S_3$ and $S_4$. These are groups of permutations. The order of $s_n$ is $n!$ and your table should reflect this.

2. Now, make Caley Tables for the groups of symmetries of the (equilateral) triangle and square, $D_3$ and $D_4$ respectively.

3. Since the geometric symmetries you used in #2 above are permutations, you should be able to find a subgroup of $S_3$ which is isomorphic to $D_3$ and a subgroup of $S_4$ which is isomorphic to $D_4$. Hey, what are these??

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**Homework 12**
Due Wednesday, March 13

- Read §2.1 and as you read, think of the word "symmetry" as a synonym for "permutation."
- Do §2.1/1,2,6,7,16,23, 25, 26, 38