LARSON—MATH 350—CLASSROOM WORKSHEET 06
Permutation!

Warm-ups

1. License plates consist of 7 letters (from our 26 letter alphabet, repetitions are allowed). How many license plates are possible?

2. License plates consist of 3 letters, followed by 4 digits. How many license plates are possible?

Permutations

3. What is a *permutation*?

4. List all the permutations of the letters a and b.

5. List all the permutations of the letters a, b and c.

6. Conjecture a formula for the number of permutations of n letters.

7. Prove it!

Permutations of n objects chosen k at a time

8. 5 runners, A,B,C,D, and E, run a race. List the possible first-second place finishes (assuming there are no ties).

9. How many are there?

10. List the possible first-second-third finishes.

11. How many are there?

12. If there are 10 runners, how many first-second place finishes are possible?

13. How many first-second-third finishes are possible?