

Reteaching 12-7

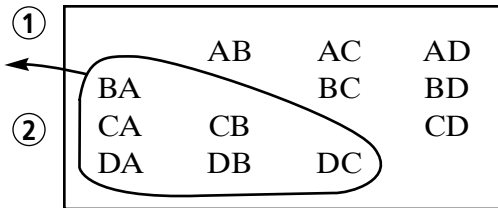
Combinations

An arrangement in which order does *not* matter is a **combination**.

For example, if you pair Raiz and Carla to play tennis, it is the same as if you pair Carla and Raiz.

How many groups of 2 letters can you form from A, B, C, and D?

① Make an organized list.



② Eliminate any duplicates.

③ List the combinations.

AB, AC, AD, BC, BD, CD

There are 6 possible combinations.

You can also get the number of combinations from the number of permutations.

$$\text{combinations} = \frac{\text{total number of permutations}}{\text{number of permutations of smaller group}} = \frac{4 \times 3}{2 \times 1} = 6 \text{ possible combinations}$$

Use the letters C, O, M, P, U, T, E, R for Exercises 1–4.

1. How many combinations of 2 vowels are there? Show an organized list with no duplicates.

2. How many combinations of 3 consonants are there? Show an organized list with no duplicates.

3. If you use C, O, M, P, U, T, E, R, S instead of C, O, M, P, U, T, E, R, how many combinations of 2 vowels are there?

4. If you use C, O, M, P, U, T, E, R, S instead of C, O, M, P, U, T, E, R, how many combinations of 3 consonants are there?

Find the number of combinations.

5. In how many ways can Robin pick 2 different kinds of muffins from a choice of wheat, raisin, blueberry, banana, garlic, and plain?

6. Sara has 24 tapes. In how many different ways can she take 2 tapes to school?

7. Augusto has purple, green, black, red, and blue T-shirts. In how many ways can he choose 3 for his vacation?

8. Abdul selects three light filters from a box of ten different filters. How many different sets could he choose?
