

In the following, tell whether the question can be answered using *permutations* or *combinations*. Explain your reasoning. Then answer the question.

1. On a biology lab exam, there are 8 stations available. You must complete the labs at 6 of the 8 stations. In how many ways can you complete the exam?
2. Your committee is voting on their logo. There are 7 possible logos and you are to rank your top 3 logos. In how many ways can you rank your top 3 logos?
3. Ninety-five tri-athletes are competing in a triathlon. In how many ways can 3 tri-athletes finish in first, second, and third place?
4. Your band director is choosing 6 seniors to represent your band at the Band Convention. There are 44 seniors in the band. In how many groupings can the band director choose 6 seniors?
5. You have 15 seashells. Your art project will use 3 of them. In how many ways can you use 3 seashells for your project?

Answer the following:

6. Fifteen sailboats are racing in a regatta. In how many different ways can three sailboats finish first, second, and third?
7. Your bowling team and your friend's bowling team are in a league with 6 other teams. In tonight's competition, find the probability that your friend's team finishes first and your team finishes second.
8. You and your friends are ordering a 3-topping pizza. The pizzeria offers 8 different pizza toppings. How many combinations of 3 pizza toppings are possible?
9. You have textbooks for 7 different classes. In how many different ways can you arrange them together on your bookshelf?
10. You make wristbands for Team Spirit Week. Each wristband has a bead containing a letter of the word COLTS. You randomly draw one of the S beads from a cup. Find the probability that COLTS is spelled correctly when you draw the beads.