

1. A pizza shop has available toppings of olives, mushrooms, peppers, sausage, pepperoni, and bacon. How many different ways can a pizza be made with 4 toppings?

15

2. The bowling team at Lincoln High School must choose a president, vice president, and secretary. If the team has 19 members, how many ways could the officers be chosen?

5814

3. Ms. Bell's mathematics class consists of 15 sophomores, 11 juniors, and 7 seniors. How many different ways can Ms. Bell create a 3-member committee of juniors if each junior has an equal chance of being selected?

165

4. A pizza shop has available toppings of pepperoni, sausage, mushrooms, anchovies, olives, onions, peppers, and bacon. How many different ways can a pizza be made with 4 toppings?

70

5. In a running competition, a bronze, silver and gold medal must be given to the top three girls and top three boys. If 10 boys and 11 girls are competing, how many different ways could the six medals possibly be given out?

712800

6. A committee must be formed with 4 teachers and 4 students. If there are 7 teachers to choose from, and 9 students, how many different ways could the committee be made?

4410

7. A committee must be formed with 3 teachers and 6 students. If there are 6 teachers to choose from, and 13 students, how many different ways could the committee be made?

34320

8. In a running competition, a bronze, silver and gold medal must be given to the top three girls and top three boys. If 11 boys and 13 girls are competing, how many different ways could the six medals possibly be given out?

1698840

9. What is the total number of different 11-letter arrangements that can be formed using the letters in the word IMAGINATION?

1663200

10. What is the total number of different 9-letter arrangements that can be formed using the letters in the word GENERATOR?

90720