

State whether the events are *independent* or *dependent*.

1. choosing an ice cream flavor and choosing a topping for the ice cream
2. choosing an offensive player of the game and a defensive player of the game in a professional football game
3. From 15 entries in an art contest, a camp counselor chooses first, second, and third place winners.
4. Jillian is selecting two more courses for her block schedule next semester. She must select one of three morning history classes and one of two afternoon math classes.

Solve each problem.

5. A briefcase lock has 3 rotating cylinders, each containing 10 digits. How many numerical codes are possible?
6. A golf club manufacturer makes irons with 7 different shaft lengths, 3 different grips, 5 different lies, and 2 different club head materials. How many different combinations are offered?
7. There are five different routes that a commuter can take from her home to the office. In how many ways can she make a round trip if she uses a different route coming than going?
8. In how many ways can the four call letters of a radio station be arranged if the first letter must be W or K and no letters repeat?
9. How many 7-digit phone numbers can be formed if the first digit cannot be 0 or 1, and any digit can be repeated?
10. How many 7-digit phone numbers can be formed if the first digit cannot be 0, and any digit can be repeated?
11. How many 7-digit phone numbers can be formed if the first digit cannot be 0 or 1, and no digit can be repeated?
12. How many 7-digit phone numbers can be formed if the first digit cannot be 0, and no digit can be repeated?
13. How many 6-character passwords can be formed if the first character is a digit and the remaining 5 characters are letters that can be repeated?
14. How many 6-character passwords can be formed if the first and last characters are digits and the remaining characters are letters? Assume that any character can be repeated.