

Practice 153

Skills and Applications of Lesson 12-4

In the school library collection there are 7 algebra books, 8 geometry books, and 5 statistics books. Carlos selects 2 books at random with replacement. Find each probability.

1. $P(\text{algebra, then statistics})$
2. $P(\text{statistics, then statistics})$
3. $P(\text{both geometry})$
4. $P(\text{not algebra, then statistics})$
5. $P(\text{not geometry, then statistics})$
6. $P(\text{algebra, then geometry})$

Debbie is making posters in her art class using felt-tipped markers. She has 10 red, 8 blue, 4 green, and 4 brown markers. She selects 3 at random with replacement. Find each probability.

7. $P(\text{red, then red, then blue})$
8. $P(\text{all green})$
9. $P(\text{blue, then red, then green})$
10. $P(\text{all red})$
11. $P(\text{blue, then blue, then not blue})$
12. $P(\text{brown, then brown, then black})$

Cora has 15 pencils in her desk drawer. Nine have erasers and six do not. She takes two pencils from her desk, one at a time, without replacement. Find each probability.

13. $P(\text{with eraser, then without})$
14. $P(\text{both with erasers})$
15. $P(\text{both without erasers})$
16. $P(\text{with eraser, then without a point})$
17. A number cube is rolled twice in a row. What is the probability of a 4 on the first roll and a 2 on the second roll?
18. John's homeroom teacher, Sonia Fuentes, announced that two people will be selected from the 22 students (14 girls and 8 boys) to represent the homeroom. What is the probability that a girl will be chosen first, then John chosen second?

NAME _____ DATE _____

Practice 154

Skills and Applications of Lesson 12-5

Solve using a Venn diagram.

Of the 205 seniors at Kennedy High School, 135 applied to colleges out of state, 120 applied to colleges in state, and 75 applied both to colleges out of state and in state.

1. How many students applied only to colleges out of state?
2. How many students applied only to colleges in state?
3. How many seniors did not apply to college?

Of 178 ninth grade students, 83 are on a sports team, 111 are in a club, and 48 are involved in both sports and a club.

4. How many ninth grade students are involved in neither sports nor a club?
5. How many ninth grade students are only on a sports team?
6. How many ninth grade students are only in a club?
7. If one student is chosen at random, what is the probability that the student is involved in either a sports team or a club?
8. If a student is chosen at random, what is the probability that the student is involved in neither a sports team nor a club?

Of 338 female students at Valley High School, 145 play soccer, 148 play volleyball, and 60 play both soccer and volleyball.

9. How many students play volleyball only?
10. How many students play soccer only?
11. If a student is selected at random, what is the probability that the student plays only volleyball?
12. How many students play neither sport?
13. If a student is chosen at random, what is the probability that the student does not play either sport?