LESSON	**Practice B**
11-4	*Compound Events*

A can of vegetables with no label has a $\frac{1}{8}$ chance of being green

beans and a $\frac{1}{5}$ chance of being corn.

1. Explain why the events "green beans" or "corn" are mutually exclusive.

   _____

2. What is the probability that an unlabeled can of vegetables
   is either green beans or corn?   _____

Ben rolls a 1–6 number cube. Find each probability.

3. Ben rolls a 3 or a 4.   _____

4. Ben rolls a number greater than 2 or an even number.   _____

5. Ben rolls a prime number or an odd number.   _____

**Of the 400 doctors who attended a conference, 240 practiced family
medicine and 130 were from countries outside the United States.
One-third of the family medicine practitioners were not from the
United States.**

6. What is the probability that a doctor practices family
   medicine or is from the United States?   _____

7. What is the probability that a doctor practices family
   medicine or is not from the United States?   _____

8. What is the probability that a doctor does not practice
   family medicine or is from the United States?   _____

Use the data to fill in the Venn diagram. Then solve.

9. Of the 220 people who came into the Italian deli on Friday, 104 bought
   pizza and 82 used a credit card. Half of the people who bought pizza
   used a credit card. What is the probability that a customer bought pizza
   or used a credit card?

Bought Pizza   Used credit card
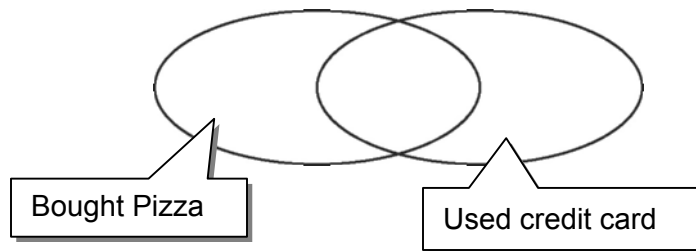
Solve.

10. There are 6 people in a gardening club. Each gardener orders seeds
    from a list of 11 different types of seeds available. What is the probability
    that 2 gardeners will order the same type of seeds?   _____

2. a. $\dfrac{1}{6}$

  b. $\dfrac{1}{2}$

  c. $\dfrac{1}{12}$

3. a. $\dfrac{10}{13}$

  b. $\dfrac{13}{17}$

  c. $\dfrac{10}{17}$

4. a. $\dfrac{10}{13}$

  b. $\dfrac{4}{17}$

  c. $\dfrac{40}{221}$

Challenge

1. HHHTHT   5. $t = 12$; 12 s

6. $t = 14$; 1 s

7. Does not exist; 15 s

8. a. possible answer: 80%

   b. possible answer: 6 tosses

9. The performance of a stock over time

Problem Solving

1. a. $P(10) = \dfrac{135}{440}$

   b. $P(Tr \mid 10) = \dfrac{6}{135}$

   c. $P(10 \text{ and } Tr) = \dfrac{6}{440} \approx 0.014$

2. a. $P(12) = \dfrac{85}{440}$

   b. $P(Tr \text{ or } Te \mid 12) = \dfrac{7 + 12}{85} = \dfrac{19}{85}$

   c.
   $P(12 \text{ and } (Tr \text{ or } Te)) = \dfrac{19}{85} \cdot \dfrac{85}{440} \approx 0.043$

3. a. $\dfrac{19}{440}$

   b. $\dfrac{6}{439}$

   c. $\dfrac{19}{440} \cdot \dfrac{6}{439} \approx 0.0006$

   d. Dependent; possible answer: the second student is one of the remaining 439 students.

4. D   5. F

Reading Strategy

1. Independent   2. Independent

3. Dependent   4. Independent

5. Independent   6. Dependent

7. Dependent   8. Event 1

9. Event 2

LESSON 11-4

Practice A

1. These events are mutually exclusive since each student can choose only one card.

2. These events are not mutually exclusive since a card can be both black and a 10.

3. $\dfrac{7}{12}$ 4. $\dfrac{2}{5}$

5. $\dfrac{1}{3}$ 6. $\dfrac{1}{2}$

7. 1   8. $\dfrac{1}{2}$

9. $\dfrac{2}{3}$ 10. $\dfrac{10}{13}$ or 0.77

Practice B

1. These events are mutually exclusive because each can contains only one type of vegetable.

2. $\dfrac{13}{40}$

3. $\dfrac{1}{3}$

c. $\dfrac{2}{52}$

4. $\dfrac{5}{6}$

5. $\dfrac{2}{3}$

d. $\dfrac{7}{13}$

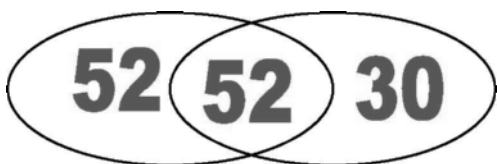6. $\dfrac{7}{8}$

7. $\dfrac{29}{40}$

4. a. $\dfrac{13}{52}$

8. $\dfrac{4}{5}$

9. $\dfrac{67}{110}$ or 0.61

b. $\dfrac{12}{52}$

c. $\dfrac{3}{52}$

d. $\dfrac{11}{26}$

10. 0.81

Challenge

Practice C

1. Given: $P(A) = 0.25$, $P(A \text{ or } B) = 0.35$, $P(A \text{ and } B) = 0.05$. Determine: $P(B)$

1. $\dfrac{14}{25}$

2. $\dfrac{3}{5}$

2. 15%

3. $\dfrac{31}{113}$ or 0.27

4. $\dfrac{777}{1130}$ or 0.69

3. a. $\dfrac{1}{4} = \dfrac{2s}{5s + 6}$

b. 16 songs

5. $\dfrac{663}{1130}$ or 0.59

6. 0.07

c. $\dfrac{7}{8}$

7. 0.11

8. 0.29

4. The probability of the shaded area is subtracted from the sum of the probabilities of the individual sets.

9. $\dfrac{183}{236}$ or 0.78

10. 0.43

5. $P(A \text{ or } B \text{ or } C) = P(A) + P(B) + P(C) - P(A \text{ and } B) - P(A \text{ and } C) - P(B \text{ and } C) + P(A \text{ and } B \text{ and } C)$

Reteach

1. a. $\dfrac{10}{13}$

b. $\dfrac{1}{13}$

Problem Solving

1. a. The total number of male students; 44

c. $\dfrac{11}{13}$

b. The total number of students in favor of the change; 54

2. a. $\dfrac{1}{13}$

c. $54 - 20 = 34$

b. $\dfrac{1}{13}$

e. $\dfrac{44}{100} + \dfrac{54}{100} - \dfrac{34}{100} = \dfrac{64}{100} = 0.64$

c. $\dfrac{2}{13}$

2. a. $100 - 44 = 56$ b. $100 - 54 = 46$

3. a. $\dfrac{26}{52}$

c. The number of females who are opposed to the change; 36

b. $\dfrac{4}{52}$

d. $\dfrac{56}{100} + \dfrac{46}{100} - \dfrac{36}{100} - \dfrac{66}{100} = 0.66$

3. $\dfrac{27}{100} + \dfrac{54}{100} - \dfrac{18}{100} = \dfrac{63}{100} = 0.63$

Holt Algebra 2