5-6B Lesson Master

USES Objective H

A pond is stocked with 200 bass, 150 perch, and 175 bluegills.

1. What is the probability that a fisherman will catch a bluegill?

2. What is the probability that the fisherman will catch a perch or a bluegill?

Pinochle is a card game using 2 decks that consists of twelve cards in each of four suits—spades, hearts, diamonds, and clubs. There are two of each ace, king, queen, jack, 10, and 9 in each suit. All cards must be dealt to play the game. The king, queen, and jack are “face” cards.

3. What is the probability of being dealt a 10?

4. What is the probability of being dealt a red face card such as the queen of diamonds?

5. What are the odds of being dealt a king?

A small box contains 30 pieces of paper, 5 of which have a star drawn on them. If students choose a paper with a star, they will receive extra credit. Jude chooses one piece of paper.

6. What is the probability that Jude will earn extra credit?

7. What are the odds that Jude will not receive extra credit?

Each crate that is delivered to the fresh market has 10 bruised peaches. The market receives 6 crates that contain 150 peaches each. Suppose you choose a peach at random.

8. What is the probability that the peach you chose will be bruised?

9. What are the odds that the peach you chose will not be bruised?

10. Are the values in 8 and 9 complements of each other? Explain.

In 11–15, use the following information. A board game has players choose letter tiles to create words. Each letter is worth a given number of points. There may be several tiles for a given letter.

<table>
<thead>
<tr>
<th>2 blanks worth 0 points</th>
<th>10 consonants worth 4 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 consonants worth 1 point</td>
<td>1 consonant worth 5 points</td>
</tr>
<tr>
<td>7 consonants worth 2 points</td>
<td>2 consonants worth 8 points</td>
</tr>
<tr>
<td>8 consonants worth 3 points</td>
<td>2 consonants worth 10 points</td>
</tr>
<tr>
<td>42 vowels worth 1 point</td>
<td></td>
</tr>
</tbody>
</table>

Let \( w \) = points the tile is worth.

11. What is \( P(w = 1) \)?

12. What is \( P(w \leq 3) \)?
13. What is \( P(w > 4 \text{ and is a consonant}) \)?

14. What is \( P(w = 10 \text{ and is a consonant}) \)?

15. What are the odds of choosing a consonant that is worth between 3 and 8 points?

16. Five fair standard dice are used to play a game. Four of the dice roll a 6. What are the odds that the last die you roll will be a 6?

17. Two fair standard dice are rolled. What is the probability that their sum will be less than 5?

A survey was conducted of 32 girls and 32 boys. No student plays more than one instrument.

<table>
<thead>
<tr>
<th>Instrument played</th>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piano</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Percussion</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Woodwind</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>No Instrument</td>
<td>6</td>
<td>18</td>
</tr>
</tbody>
</table>

18. What is the probability that a student chosen at random plays the piano?

19. What is the relative frequency of boys to girls who play a percussion instrument?

20. What is the relative frequency of girls who play the piano or a woodwind instrument to the total girls?

21. If these students can be used to represent a student population of 352, then how many boys would you expect to play the piano?