12-6 Additional Practice

Probability and Decision Making

1. There are 3 red apples and 1 green apple in a bowl. Gemma and Raul both want the green apple. How can they use probability to fairly decide who will get the green apple?

2. In each hand of a card game, there is a 54% chance of winning 3 points and a 46% chance of losing 4 points. Is the game a fair game? Explain

3. A theater coach can send only 3 of 20 applicants to a workshop. To be fair he assigns each student a number from 1 to 20. He uses the numbers below to select students. Which students were selected? Would you expect the same results if you used the same method? Explain.

   randInt(1,20) 20 **randInt(1,20) 5** **randInt(1,20) 16**

4. In a game at a fundraiser, Choice A gives you a 12% chance of winning 8 prize tickets and Choice B gives you a 46% chance of winning 2 prize tickets. Would you play Choice A or Choice B? Explain.

5. The board members of a company think there is a 75% chance of high demand and a 25% chance of low demand for a new product. If the company sells online, research models suggest profits of $20 per unit if there is high demand and $15 per unit if there is low demand. If the company sells through stores, models suggest profits of $50 per unit if there is high demand and –$10 per unit if there is low demand. Is it better to sell online or through stores? Explain.

6. The director of a race needs 10 volunteers. Because 20% of the volunteers in the past have not shown up, the director assigns 12 volunteers. Find the probability that 10 volunteers show up, 12 volunteers show up, and at least 10 volunteers show up. Do you think the director is assigning enough volunteers? Explain.