Name

13-8B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 934–937 for objectives.

USES Objective J

1. In Washington State's Daily Game, participants select a 3-digit number using any combinations of 0 through 9.

   a. In how many ways can a player select a 3-digit number? Explain your answer.

   b. What is the probability of winning the jackpot by matching all three digits? _____

   c. If the lottery game costs $1 to participate, and the jackpot is worth $500, does the state gain money, lose money, or break even in the long run? Explain your reasoning.

2. In Minnesota's GOPHERS game, 5 balls are chosen from balls numbered 1–39. You can win prizes for matching 3 of the 5 balls and 4 of the 5 balls.

   a. What is the probability of picking exactly 3 of the 5 winning numbers? Show your computation. _____

   b. What is the probability of picking exactly 4 of the 5 winning numbers? _____

   c. What is the probability of picking all 5 winning numbers? _____

3. In the Guess-the-Number booth at the state fair, participants select a 4-digit number using any combination of the numbers, 1 through 6, rolled on a die.

   a. What is the probability of picking the correct 4-digit number? _____

   b. If the prize is $1000, and it costs 50¢ to play, does the Guess-the-Number booth gain money, lose money, or break even in the long run? Explain your reasoning.

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In 4–8, consider the Spin 6 game at a fair. A wheel with the numbers 1 through 36 is spun 6 times. Prizes are given for anyone who picks 3 out of the 6 numbers, 4 out of 6, 5 out of 6, or 6 out of 6.

4. What is the probability of picking exactly 3 out of the 6 numbers? _____

5. What is the probability of picking exactly 4 out of the 6 numbers? _____

6. What is the probability of picking exactly 5 out of the 6 numbers? _____

7. What is the probability of picking exactly 6 out of the 6 numbers? _____

8. The prizes in Spin 6 are \$150 for picking exactly 3 out of 6 numbers, \$2000 for 4 out of 6, and \$75,000 for 5 out of 6.

   a. Based on the probabilities found in Questions 4 through 6, do these prize amounts seem reasonable? Why or why not?

   b. **Multiple Choice** Based on the other prize amounts and the probabilities found in Questions 4 through 7, which prize would be appropriate for someone who chooses 6 out of 6 numbers correctly? Explain your choice.

   A \$5 million **B** \$13 million **C** \$20 million

9. At the after-prom party, 5 balls are chosen from 20 balls numbered from 1 to 20. Each couple may choose one game ticket. Enough prizes were donated to be able to award one prize to roughly every 25 couples. If a prize is given to each couple who pick 3 out of 5 numbers, will there be enough prizes? Explain your reasoning.