

## Practice Problems 12

1. Assume that a player guesses 6 numbers in the range of 1 to 40. Then you select 15 numbers in that same range (1 to 40).
  - a. What is the probability space of the game?
  - b. What is the probability that the player guesses 6 correctly?
  - c. What is the probability that the player guesses 5 correctly?
  - d. What is the probability that the player guesses 4 correctly?
2. Assume you have 25 cards numbered from 1 to 25. You draw 2 cards (order does matter). Assume the following events and calculate the probabilities.

E: The first card is a 3.  
F: The second card is a 4.

  - a.  $P(E) =$
  - b.  $P(F) =$
  - c.  $P(F/E) =$
  - d. Are the experiments independent?
3. Assume you have 2 times 25 cards numbered from 1 to 25 each. So you have a total of 50 cards. You draw 2 cards (order does matter). Assume the following events and calculate the probabilities:

E: The first card is a 5.  
F: The second card is a 5.

  - a.  $P(E) =$
  - b.  $P(F) =$
  - c.  $P(F/E) =$
4. Are the experiments independent?