**Unit 8 #3 Compound Probability**

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| **Independent Events** | |
| Definition: involves two or more events in which the outcome of one event \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ affect the outcome of any other events | Examples:   * Your grade in Math class and your grade in English class * The final score of a hockey game played in Los Angeles, and the final score of a basketball game played in New York |
| Example 1: *P*(jack, factor)  bd08671_[1] | Example 2: You roll a red number cube and a blue number cube. What is the probability that you roll a 5 on the red cube and a 1 or 2 on the blue cube?  The probability of rolling a 5 The probability of rolling a  on the red number cube is 1 or 2 on the blue number   cube is  \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_  Find the probability of rolling a 5 on the red cube AND a 1 or 2 on the blue cube. |
| **Dependent Events** | |
| Definition: involves two or more events in which the outcome of one event \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ affect the outcome of the other events | Examples:   * Drawing from the same deck of cards * Selecting items from a container \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ replacement |
| Example 3: *P*(Q, S)   * All the letters of the alphabet are in the bag 1 time. * Do not replace the letter.   j0325338[1] | Example 4: One freshman, 2 sophomores, 4 juniors, and 5 seniors receive top scores in a school essay contest. To choose which 2 students will read their essays at the town fair, 2 names are chosen at random from a hat. What is the probability that a senior and then a junior are chosen?  The probability that a senior The probability that a  is chosen first is junior is chosen after a   senior is chosen is  \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_  What is the probability that a senior and then a junior is chosen? |

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| **FORMULAS** | |
| **INTERSECTIONS** | **UNIONS** |
| P(A \_\_\_\_\_\_\_ B) = *P*(*A* \_\_\_\_ *B*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | P(A \_\_\_\_ B) = *P*(*A* \_\_\_\_ *B*) = |
| Example 5: At a picnic, there are 10 diet drinks and 5 regular drinks. There are also 8 bags of fat-free chips and 12 bags of regular chips. If you grab a drink and a bag of chips without looking, what is the probability that you get a diet drink and fat-free chips? | You roll a standard die. are the events mutually exclusive?  6. Rolling a 2 and a 3 7. Rolling an even number   and a multiple of 3  8. Rolling an even number 9. Rolling an even number and   and rolling prime number rolling a number less than 2 |
| Practice Problem: Using the information in #5, what is the probability that you get a regular drink and regular chips? | Example 10: Suppose you reach into a dish and select a token at random. What is the probability that the token is:  a. Round or Green?  b. Orange or Triangle?  c. Yellow or Square? |