Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table #: \_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_

**10.5B Independent and Dependent Events\_Classwork**

*Objective: identify independent and dependent events; use formulas to find probabilities of independent and dependent events (CC.SS.7.SP.8a and CC.SS.7.SP.8b. MP3 Construct Viable Arguments)*

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| **WARM-UP**  A card is drawn from the bag with number 1 through 10. Two consecutive draws are made from the bag without replacement of the first draw.   |  |  | | --- | --- | | 1. How many possible outcomes are there? | 1. P(3 or a 5) | | 1. P(even or a prime) | 1. P(3 or less than 2) | |

**Independent Events**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| 1. Bag A contains 9 red marbles and 3 green marbles. Bag B contains 9 black marbles and 6 orange marbles. Find the probability of selecting one green marble from bag A and one black marble from bag B. | 1. Two seniors, one from each government class are randomly selected to travel to Washington, D.C. Wes is in a class of 18 students and Maureen is in a class of 20 students. Find the probability that both Wes and Maureen will be selected. |

**Dependent Events:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| 1. A box contains 5 purple marbles, 3 green marbles and 2 orange marbles. Two consecutive draws are made from the box **without replacement** of the first draw. Find the probability of each event.   Without replacement means: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. P(orange first, green second) 2. P(both marbles are purple) 3. P(the first marble is purple, and the second is ANY color EXCEPT purple) | 1. If there was only one government class, and Wes and Maureen were in that class of 38 students, what would be the probability that both Wes and Maureen would be selected as the two students to go to Washington?   Explain why the problem is an example of independent event? |

**PRACTICE PROBLEMS**

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| 1. A six-sided die is rolled and a spinner with six equal spaces labeled A-F is spun 2. Independent event or dependent event? 3. How many possible outcomes are there? 4. P(1 and A) 5. P(odd and B) 6. P(1 and K) 7. P (prime and D) | 1. A card is drawn from the bag with number 1 through 10. Two consecutive draws are made from the bag without replacement of the first draw. 2. Independent event or dependent event? 3. How many possible outcomes are there? 4. P(3 and a 5) 5. P(even and a 1) 6. P(3 and less than 2) |
| 1. In a bag there are 2 red marbles, 3 white marbles and 5 blue marbles. Once a marble is selected, it is NOT replaced. Find the following probabilities. 2. Independent event or dependent event? 3. P(red, then white) 4. P(blue, then red) 5. P(red, red, red) 6. P(blue, blue, white) | 1. If you draw two cards from a standard deck of 52 cards without replacement, find: 2. Independent event or dependent event? 3. P(King first, Jack second) 4. P(face card first, ace second) 5. P(2 aces) |

Homework: worksheet 10.4B HW