Accelerated Geometry Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conditional Probability Practice Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\*\*The answers are located on the last page.

1. A math teacher gave her class two tests. 25% of the class passed both tests and 42% of the class passed the first test. What percent of those who passed the first test also passed the second test?
2. A jar contains black and white marbles. Two marbles are chosen without replacement. The probability of selecting a black marble and then a white marble is 0.34, and the probability of selecting a black marble on the first draw is 0.47. What is the probability of selecting a white marble on the second draw, given that the first marble drawn was black?
3. The probability that it is Friday and that a student is absent is 0.03. Since there are 5 school days in a week, the probability that it is Friday is 0.2. What is the probability that a student is absent given that today is Friday?
4. At Kennedy Middle School, the probability that a student takes Technology and Spanish is 0.087. The probability that a student takes Technology is 0.68. What is the probability that a student takes Spanish given that the student is taking Technology?
5. **In New York State, 48% of all teenagers own a skateboard and 39% of all teenagers own a skateboard and roller blades. What is the probability that a teenager owns roller blades given that the teenager owns a skateboard?**
6. **At a middle school, 18% of all students play football and basketball and 32% of all students play football. What is the probability that a student plays basketball given that the student plays football?**
7. **In the United States, 56% of all children get an allowance and 41% of all children get an allowance and do household chores. What is the probability that a child does household chores given that the child gets an allowance?**

**Key**

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| 1.    | A math teacher gave her class two tests. 25% of the class passed both tests and 42% of the class passed the first test. What percent of those who passed the first test also passed the second test?  |  |
| Solution:    |

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| P(Second|First)  |   =    | P(First and Second)  |   =    | 0.25  |   =    | 0.60  |   =    | 60%  |
| P(First)  | 0.42  |

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| 2.   | A jar contains black and white marbles. Two marbles are chosen without replacement. The probability of selecting a black marble and then a white marble is 0.34, and the probability of selecting a black marble on the first draw is 0.47. What is the probability of selecting a white marble on the second draw, given that the first marble drawn was black?  |
| Solution:    |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P(White|Black)  |   =    | P(Black and White)  |   =    | 0.34  |   =    | 0.72  |   =    | 72%  |
| P(Black)  | 0.47  |

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| 3.     | The probability that it is Friday and that a student is absent is 0.03. Since there are 5 school days in a week, the probability that it is Friday is 0.2. What is the probability that a student is absent given that today is Friday?  |
| Solution:    |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P(Absent|Friday)  |   =    | P(Friday and Absent)  |   =    | 0.03  |   =    | 0.15  |   =    | 15%  |
| P(Friday)  | 0.2  |

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| 4.    | At Kennedy Middle School, the probability that a student takes Technology and Spanish is 0.087. The probability that a student takes Technology is 0.68. What is the probability that a student takes Spanish given that the student is taking Technology?  |
| Solution:    |  |
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| P(Spanish|Technology)  |   =    | P(Technology and Spanish)  |   =    | 0.087  |   =    | 0.13  |   =    | 13%  |
| P(Technology)  | 0.68  |

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5. 81%

6. 56%

7. 73%