Name_____**Date**_____**Period**_____**Score**_____

1.   **Rock, paper, scissors**
        Probability models: Equally likely outcomes

        There is a website where humans can play paper, scissors, rock with a computer.
        Irresistibly drawn to it, you play the game 2 times. Assume that the computer is
        randomly choosing its moves for both games (2 players).

        (a)   Give a probability model for the computer's chance process.

        (b)   Define event A as the computer chooses the same move for both games.
                Find P(A).

2.   **Wing night**
        Probability models: Equally likely outcomes

        Buffalo Wild Wings ran a promotion called the Blazin' Bonus, in which every $25 gift
        card purchased also received a "Bonus" gift card for $5, $15, $25, or $100. According
        to the company, here are the probabilities for each Bonus gift card:

Blazin' Bonus	$5	$15	$25	$100
Probability	0.890	0.098	0.010	0.002

        (a)   Explain why this is a valid probability model.

        (b)   Find the probability that you don't get a $5 Bonus card.

        (c)   What's the probability that you get a $25 or $100 Bonus card?

3. **Subject preference and gender**
   Two-way tables and probability

   Do males and females have a different preference for math or English classes? The two-way table summarizes data about gender and subject preference for a class of 25 AP® Statistics students.

		Gender		
		Male	Female	Total
Preferred subject	Math	8	12	20
	English	2	3	5
	Total	10	15	25

   Suppose we choose a student from the class at random.
   Define event A as getting a male student and event B as getting a student who prefers math classes.

   (a)   Find $P(A)$.

   (b)   Find $P(A$ and $B)$. Interpret this value in context.

   (c)   Find $P(A$ or $B)$.

4. **Where are the best tacos?**
   General addition rule

   A survey of all students at a large high school revealed that, in the last month, 38% of them had dined at Taco Bell, 16% had dined at Chipotle, and 9% had dined at both. Suppose we select a student at random.

   What's the probability that the student has dined at Taco Bell or Chipotle in the last month?

5.   Pandora or Spotify?
Venn diagrams and probability

According to a recent report, Pandora and Spotify are the most used music-streaming apps. A group of AP® Statistics students surveyed all the seniors in their school and found that 68% use Pandora, 38% use Spotify, and 24% use both.

Suppose we select a senior at random.

(a)   Make a Venn diagram to display the sample space of this chance process using the events P: uses Pandora and S: uses Spotify.

(b)   Find the probability that the person uses neither Pandora nor Spotify.