**Assignment 1**

The due date for submitting this assignment has passed. You are not allowed to submit this assignment.

1. What is the size of the sample space of the event consisting of the toss of a fair die followed by the toss of a biased coin with probability of head 0.2 and tail 0.8?
   - Size = 12
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: 12

2. Which of the following is a possible value of the probability of an event?
   - 0
   - 0.1
   - 0.5
   - 1
   - None of the above
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: 0.1

3. How many valid, yet different results are there for Bertrand's paradox?
   - At least 3
   - 3
   - 2
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: At least 3

4. Find $P(A \cup B) = 0.5$, $P(A|B) = 0.1$ and $P(A\bar{B}) < 0.5$.
   - $P(A) = 0.4$
   - $P(B) = 0.3$
   - $P(A) = 0.6$
   - $P(A) = 0.2$
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: 0.4

5. Can we construct an event $A$ such that $P(A) = 0.6$ and $P(A^c) = 0.5$?
   - No
   - Yes
   - Can't say
   - Depends on the Sample Space
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: No

6. Find $P(A \cup B | C) = 0.3$, $P(A | B \cup C) = 0.2$, $P(A | B) = 0.3$, $P(B | \bar{C}) = 0.4$, $P(C | B) = 0.3$, $P(A | \bar{B} \cup C) = 0.2$, $P(B | \bar{C} | A) = 0.5$, $P(A | B, \bar{C}) = 0.4$
   - No
   - Yes
   - Can't say
   - None of the above
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: Yes

7. What is the probability of complement of a null event?
   - 0
   - 1
   - Can't say
   - None of the above
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: 0

8. A card is randomly drawn from a standard 52 card deck. Find the probability of drawing a queen or a heart.
   - $\frac{1}{13}$
   - $\frac{1}{26}$
   - $\frac{1}{52}$
   - $\frac{1}{12}$
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: $\frac{1}{13}$

9. A jar contains 2 pink, 8 red, and 4 blue marbles. If you pick one marble at random, what is the probability that the marble you pick will be red or blue?
   - $\frac{10}{18}$
   - $\frac{10}{12}$
   - $\frac{10}{16}$
   - $\frac{10}{18}$
   - No, the answer is incorrect. Score: 0
   - Accepted Answers: $\frac{10}{18}$

10. Five fair coins are flipped simultaneously. What is the probability of having a combination of 3 Heads and 2 Tails?
    - $\frac{5}{12}$
    - $\frac{5}{16}$
    - $\frac{5}{10}$
    - $\frac{5}{9}$
    - No, the answer is incorrect. Score: 0
    - Accepted Answers: $\frac{5}{12}$