MA 105 Introduction to Probability Worksheet I

MA 105-03, Maj. Givler

Name: _____

Directions: Answer each question below. You must show all work in order to receive full credit. Carefully indicate your answer. You may work individually, with a partner, or in a small group; please indicate who you worked with. You may use your textbook or class notes as needed.

1. Circle all of the numbers below that are valid probabilities. For the numbers that are not probabilities, either convert to a probability (if possible) or explain why the number is not a probability.
   $0.25, \quad 3, \quad 26\%, \quad \frac{4}{53}, \quad -0.4, \quad 0, \quad \frac{12}{11}$

2. Determine the simple events that make up the given event.
   (a) Rolling two even numbers on a pair of dice.

   (b) Randomly selecting a king from a deck of playing cards.

   (c) Out of 3 puppies born, 2 are girls.

3. Determine the sample space for each scenario below.
   (a) Rolling a pair of dice.

   (b) Randomly selecting a card from a standard deck of playing cards.

   (c) The genders of 3 puppies.

4. Determine the probability of each of the given events.
   (a) Rolling two even numbers on a pair of dice.

   (b) Randomly selecting a king from a deck of playing cards.

   (c) Out of 4 puppies born, 3 are girls.

5. Describe the complement of each of the following events, and find the probability of the complement.
   (a) Rolling two even numbers on a pair of dice.

   (b) Randomly selecting a king from a deck of playing cards.

   (c) Out of 3 puppies born, 2 are girls.

6. Using classical probability methods, determine the probability of getting one head and one tails when two coins are flipped.

7. The National Transportation and Safety Board's document M-04-04 recommends using a mean weight for adult men of 166.3 lb when calculating weight limits for boats, planes, etc. However, the sample of 40 men collected by our book's author had a mean weight of 182.9 lb. If the National Transportation and Safety Board is correct, there is a 0.00697 probability that a random sample of 40 men would have a mean weight of 182.9 lb or higher. Do you believe the National Transportation and Safety Board's claim? Why or why not?