

The following multiple choice questions are worth 5 points each.

1. Three dice are tossed. The number rolled on each die is recorded. How many outcomes are in the sample space?
 - a. 18
 - b. 72
 - c. 216
 - d. 42
 - e. none of the above

2. Three dice are tossed. The sum of the numbers rolled is recorded. How many outcomes are in the sample space?
 - a. 18
 - b. 12
 - c. 16
 - d. 72
 - e. none of the above

3. A fair coin is tossed three times. Find the probability of getting exactly 2 heads.
 - a. $\frac{1}{2}$
 - b. $\frac{1}{3}$
 - c. $\frac{2}{3}$
 - d. $\frac{3}{8}$
 - e. $\frac{1}{4}$

4. Serial numbers start with one of the letters a, b, c, d, or f followed by 3 non-repeating digits. What is the probability that a serial number does not contain the letter b and does not contain the digit 7?
 - a. 0.5832
 - b. 0.7290
 - c. 0.7000
 - d. 0.5600
 - e. 0.8750

Name: _____

Section: _____

The following questions are free response. Please show all work in order to receive credit.

11. (12 points)

- a. _____ is a number that describes a population.
- b. If an outcome never occurs its probability is _____.
- c. According to _____ when sample size is sufficiently large, the mean of the sampling distribution is equal to the population mean.
- d. _____ occur when every possible outcome of a random phenomenon has the same probability.
- e. According to _____ as a random phenomenon is repeated many times, the mean \bar{x} of the observed outcomes approaches the mean μ of the probability model.
- f. _____ is a number that describes a sample.

13. The length of a student's college career at the University of Delaware is known to be normally distributed with a mean length of 5.5 years and a standard deviation of .75 yrs. (12 points)
- Sketch the normal curve. Locate the values of the mean and two standard deviations above and below the mean.
 - What percent of students have college careers lasting between 4 and 7 years?
 - Between what two years do the middle 50% of University of Delaware students fall?
 - Find the percentage of students who complete their college careers between 5.5 and 6 years (correct to 2 decimal places).

