

Exam 1 — Sample

1. Consider the following frequency distribution.

White Blood Cell Count of Males	Frequency
3.0–4.9	8
5.0–6.9	15
7.0–8.9	11
9.0–10.9	5
11.0–12.9	1

- (a) Find the class width.
 (b) Find the class midpoints.
 (c) Find the class boundaries.
 (d) Construct a histogram.
2. In a survey of consumers aged 12 and older, respondents were asked how many cell phones were in use in their household. (No two respondents were from the same household). These are the results of the survey.

Number of cell phones	Number who responded
None	221
One	290
Two	378
Three	146
Four or more	122

- (a) If a respondent is selected at random, what is the probability that there are *three* or more cell phones in the household?
 (b) Is it *likely* for a household to have four or more cellphones? Why or why not? Consider an event to be likely if its probability is greater than or equal to 0.95.
3. Listed below are the numbers on the jerseys of the starting lineup for the New Orleans Saints when they won their first Super Bowl.

9 12 19 23 25 73 74 76 77 78 88

- (a) Find the mean and median for this data.
 (b) What, if anything, do the median and mean tell us about the team? Does it make sense to compute the measures of center for this data? Why or why not?
4. Listed below are arrival delay times of randomly selected American Airlines flights from New York's JFK airport to LAX. Negative values are flights that arrived early.

-15 -18 -32 -9 -32 11 2

- (a) Find the mean of the data and standard deviation.
 (b) What is the z-score of a delay time of 25?
 (c) I'm going to pick up a friend flying from JFK at LAX and their flight is scheduled to arrive at 12:35pm. I'm very lazy and don't want to wait for them any more than I have to, but I also don't want them to have to wait for me. What would be a good time to be at the airport waiting for them? Why?

5. The following table contains data comparing whether or not people plead guilty to who gets sentenced to prison.

	Guilty Plea	Plea of Not Guilty
Sentenced to Prison	392	58
Not Sentenced to Prison	564	14

- (a) If one of these subjects is chosen at random, what is the probability they were sentenced to prison?
- (b) What is the probability of a subject pleading guilty *and* not being sentenced to prison?
- (c) What is the probability of a subject pleading not guilty *or* not being sentenced to prison?
- (d) If 5 people are selected at random *without* replacement, what is the probability that all 5 entered pleas of not guilty?
- (e) If 5 people are selected at random *with* replacement, what is the probability that all 5 entered pleas of not guilty?
6. Consider the following set of data:

3 5 6 9 9 10 13 15 15 15 18 20

- (a) What is the percentile of 15?
- (b) What is the value of the 25th percentile?
- (c) What are Q_1 and Q_3 ?
- (d) Draw a boxplot of the data.