Data and Chance notes
Chapters 17 and 18

Below are terms from the readings. Write definitions and examples in the spaces provided. Answer the questions where indicated. Many of the ideas here are not in the chapters and will be gotten from lecture.

Chapter 17: Thinking about chance
Chapter 18: Probability models

What is the general formula for the probability of an event where the possible outcomes are equally likely? (For instance, how do you find the probability of rolling a 4 on a six-sided die or the probability of picking a black card from a poker deck?)

Define the following terms.
Experiment:

Outcome:

Success:

Sample space:

Event:

Trial:

Mutually exclusive events:

Independent events:

What is the difference between theoretical probability and experimental probability?

If you toss a coin six times and get TTTTTT, is it more likely that the next toss will result in a Head? Use this setup to discuss a common misconception, the "law of averages".

What is the point of the "What is probability?" applet activity? (What happened to the experimental probability as the number of tosses increased?)

You toss a coin and roll a six-sided die. Write down the sample space of this experiment.

There are four rules/formulas we will use. Recall them below. (These are not necessarily in the book.)
What is the probability of two mutually exclusive events A or B occurring?

What is the probability of two non-mutually exclusive events A or B occurring?

What is the probability of two independent events A and B occurring?

What is the probability of two non-independent events A and B occurring?

What is the sum of the probabilities of all possible mutually exclusive outcomes?

What is the range of numbers that a probability must lie within?

Give an experiment and an event that has a probability of zero.

Give an experiment and an event that has a probability of one.

What is a probability model?

If you know the probability of a certain event is .45, what is the probability that the event will not happen? Write down the general rule for the probability of an event not occurring.