SAMPLE SPACES

TEXT: 3.1

LAST NAME	FIRST NAME	DATE

1 (5 points)**.** Suppose we toss a fair coin four times and record the results as a sequence, for example Heads, Heads, Tails, Heads. List all of the possible outcomes of this experiment (there are 16 of them).

Assuming that all outcomes are equally likely, find the probability that

(a) no Tails show up.

(b) Tails show up at exactly once.

(c) Heads show up twice and Tails show up twice.

(d) Heads show up three or more times in a row.

2 (3 points)**.** Suppose there are 5 astronauts who are training for a space walk: Amber, Boris, Clyde, Dina, and Eliane; Boris and Clyde are male, and the other three are female. An experiment consists in choosing 2 astronauts randomly to participate in the next field test. Assume that all outcomes of this experiment are equally likely.

(a) Construct the sample space for this experiment

(b) What are the chances that Clyde gets chosen?

(c) What are the chances that both participants are female?

3 (3 points)**.** An experiment consist of tossing two dice: a four-sided die with numbers 1 through 4, and a six-sided die with numbers 1 through 6. Assume that all outcomes of this experiment are equally likely.

(a) Construct the sample space for this experiment.

(b) Find the probability that the two dice show the same number.

(c) Find the probability that the six-sided die shows a larger number than the other die.