Modeling Challenges

Name(s) _____

For each problem, build a model with a sampler. Then run the sampler to estimate the probability. Show your results and answers.

Carnival Game

At the carnival, there is a slot machine with two wheels. Each wheel has numbers from 1 to 5.

Kelly spins the two wheels, gets two numbers, and adds them. She must get a sum of 8 or more to win a prize. What is her chance of winning a prize?
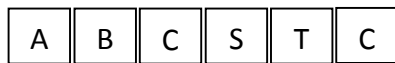
Rain

There is a 75% chance of rain for each of the next four days.

What is the chance of getting rain on all four days?

Letters

Jessica has six letters printed on cards, as shown here:

A	B	C	S	T	C

After mixing them up, she blindly picks three letters and arranges them in line.

What is the probability that the three letters spell the word CAT?

C	A	T

True or False

Mike is taking a test with five true-false questions. He has to answer at least three of the questions correctly to pass the test, but he doesn't know any of the answers. If he just guesses on all five questions, what is the probability that he'll pass the test?