Stat 171 - Exam 2
SHOW ALL OF YOUR WORK

Name: _____

   You are planning a three-day trip to Seattle, WA, in October. Assume each day is going to be either **S**unny or **R**ainy.

1. Recording the weather condition of your three-day trip, give an example of an outcome.

2. Draw a <u>tree diagram</u> and <u>list the sample space</u> for the weather during the three days of your trip.

3. Let E be the event that exactly two of the three days being sunny. What is the theoretical probability of E? Explain.

4. What is the complement of E? What is its probability?

5. Let A be the event that the first two days were sunny, and B be the event that the last two days were sunny.

   (a) Find $P(B \,|\, A)$. Are A and B independent? Why?

6. The table shows the results of a survey that asked 1048 U.S. adults whether they support or oppose a special tax on junk food. A person is selected at random from the sample. Find the probability of each event.

	Support	oppose	Unsure	Total
Male	163	325	5	493
Female	396	300	22	555
Total	396	625	27	1048

(a) The person opposes the tax.

(b) The person is female.

(c) The person opposes the tax **and** is female.

(d) The person opposes the tax **or** is female.

7. There are 10 finalists in a singing competition. The top 3 singers receive prizes.

(a) How many ways can the singers receive a prize?

(b) How many ways can the singers finish first through third?

Optional problems

8. A sample of people are asked how much they have donated to charity last year. Draw a frequency histogram labeled with class midpoints for the given data, using 5 classes.

$$215, 157, 122, 238, 354, 490, 483, 294, 383, 334, 259, 387, 100, 367, 406,$$
$$10, 424, 310, 384, 245, 226, 247, 367, 483, 94, 298, 57, 260, 201, 387.$$

Optional problems

9. The table shows the results of a survey that asked 1048 U.S. adults how much they donated to charity last year. Find the <u>standard deviation</u> of the data.

	0	**100**	**200**	**500**
Frequency	396	625	22	5