

**More About
Probability**

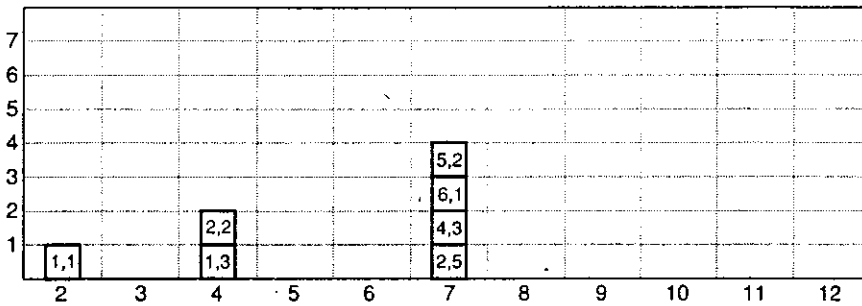
8.8

Name _____

What is the probability you will obtain a total of 5 when you roll two dice? In this project, you will compare the theoretical and experimental probabilities of obtaining each of the totals possible when two dice are rolled. You will use your knowledge of probability as well as your knowledge of graphs.

First, roll a pair of dice fifty times. As you do so, create a graph of your results. The horizontal axis should list all possible totals that can be rolled. The vertical axis should list the number of rolls. As you graph each roll of the dice, note the value of each die. See the example below.

Experimental Probability Results



After you complete this graph, answer the following questions.

- What would you predict to happen if you rolled the cubes 100 times?
- Look at your graph. What shape does your graph create?
- Can you make any observations and/or conclusions from your graph?

Next, create a theoretical probability graph. Label the horizontal and vertical axes as above. On this graph, indicate *all* possible combinations for each total. For example, the possible combination for a total of 3 are (2, 2), (1, 3), and (3, 1). Now, refer to this graph to answer the questions given above. Can you make any observations and/or conclusions from comparing both graphs?

Be prepared to comment on any or all of these questions when they come up in class. As always, your graph should be neat and colorful.