Spinner Learning Task 2 (Not Equally Likely Outcomes)

Using a compass, protractor and straight edge, draw a circle with 8 sectors. Your sectors should meet the following requirements:

- You should have two sets of four congruent sectors.
- The sectors in one set should be twice as large as the sectors in the other.

How can you be sure that your circle meets these requirements? Explain your thinking.

Label each sector with a dollar amount in increments of $100 beginning with $100 and ending with $800. Place $200, $300, $400 and $800 in the larger sectors.

Now, place your clear plastic spinner over your circle to create your own personalized spinner.

Explain how this spinner is different from spinner 1.

Do you think that your homemade spinner is fair? How can you tell? Is the interpretation of fair the same for spinner 1 and spinner 2? What should a dotplot for spinner 2 look like? How is it different from the dotplot for spinner 1?

Spin your spinner at least 50 times and record the outcomes on your paper. Make a dotplot of your results. Compare your dotplot to what you predicted. Discuss any differences.

Use appropriate technology like the TI-83 Plus Probability Simulation or the National Library of Virtual Manipulatives at nlvm.usu.edu/en/nav/v**library**.html to generate a dotplot for an increasingly greater number of spins on your spinner. At what number of spins is the shape of your dotplot consistent with the shape of a dot plot produced using a spinner designed according to the specifications given above? Why?

Based on this spinner, answer the following questions and justify your thinking.

1) What is the probability of obtaining $800 on the first spin?

2) What is the probability of obtaining $500 on the first spin?

3) Is it just as likely to land on $100 as it is on $800?

4) What is the probability of obtaining at least $500 on the first spin?

5) What is the probability of obtaining less than $200 on the first spin?

6) What is the probability of obtaining at most $500 on the first spin?

7) If you spin the spinner twice, what is the probability that you will have a sum of $200?

8) If you spin the spinner twice, what is the probability that you will have a sum of at most $400?

9) If you spin the spinner twice, what is the probability that you will have a sum of at least $1500?

10) Given that you landed on $100 on the first spin, what is the probability that the sum of your two spins will be $200?

11) Given that you landed on $800 on the first spin, what is the probability that the sum of your two spins will be at least $1500?

12) Write a summary of your thoughts and conclusions regarding spinner 2.