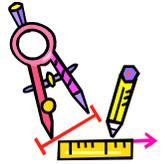


Using only a compass and straight edge, construct a circle divided into 8 equal sectors.



Label each sector with a dollar amount in increments of \$100, beginning with \$100. Label the sectors in any order you choose. Now, place the clear plastic spinner over your circle to create your own personalized spinner.

Do you think that your homemade spinner is as fair as a store bought spinner? \_\_\_\_\_  
\_\_\_\_\_

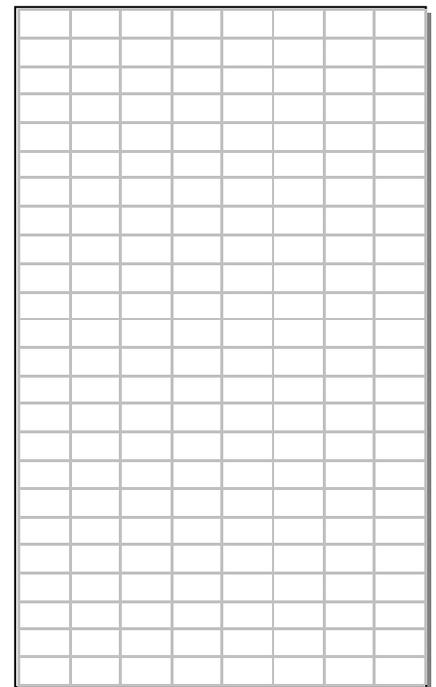
How can you tell? \_\_\_\_\_  
\_\_\_\_\_

If your spinner is fair and you made a dot plot for a specific number of spins, what do you think the dot plot should look like? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Spin your spinner at least 50 times and record the outcomes on your paper. Make a dot plot of your results.

Look at your dot plot. Is the shape consistent with the shape of a dot plot that would have been produced from spinning a fair spinner? Justify your answer. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Based on the shapes of your dot plot, do you think 50 spins are enough to determine whether or not your spinner is fair? Explain your reasoning. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Use appropriate technology like the TI-83 Plus Probability Simulation or the National Library of Virtual Manipulatives at <http://nlvm.usu.edu/en/nav/vlibrary.html> to generate a dot plot for an increasingly greater number of spins on your spinner. At what number of spins is the shape of your dot plot consistent with the shape of a dot plot produced using a fair spinner? Why? \_\_\_\_\_

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Work under the assumption that your spinner is fair. Answer the following questions for your spinner and explain your reasoning for each.

1. What is the probability of obtaining \$800 on the first spin? \_\_\_\_\_
2. What is the probability of obtaining \$400 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. If you spin the spinner twice, what is the probability that you will have a sum of at least \$300? \_\_\_\_\_
11. Given that you landed on \$100 on the first spin, what is the probability that the sum of your two spins will be \$200? \_\_\_\_\_

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12. 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 \$1000?

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13. Write a summary of your thoughts and conclusions regarding spinner 1. \_\_\_\_\_

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Using only a compass and straight edge, construct a circle that has 8 sectors in total such that you 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. \_\_\_\_\_

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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 the clear plastic spinner over your circle to create your own personalized spinner.

Explain how this spinner is different from spinner 1. \_\_\_\_\_

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Do you think that your homemade spinner is fair? How can you tell? \_\_\_\_\_

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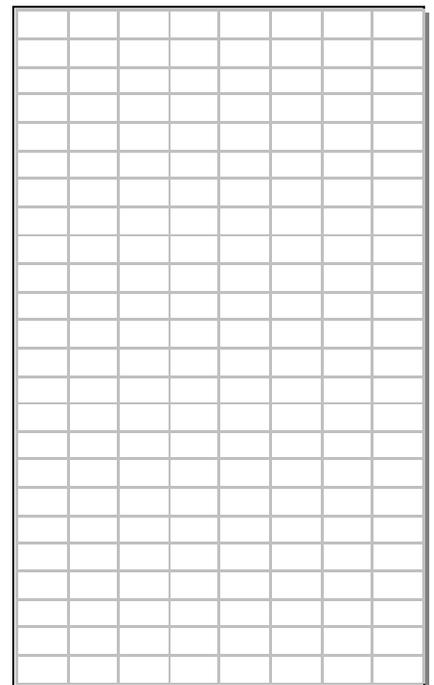
Is the interpretation of fair the same for spinner 1 and spinner 2? What should a dot plot for spinner 2 look like? How is it different from the dot plot in spinner 1? \_\_\_\_\_

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Spin your spinner at least 50 times and record the outcomes on your paper. Make a dot plot of your results. Compare your dot plot 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 <http://nlvm.usu.edu/en/nav/vlibrary.html> to generate a dot plot for an increasingly greater number of spins on your spinner. At what number of spins is the shape of your dot plot consistent with the shape of a dot plot produced using a fair spinner? 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. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_