

Geometric Probability

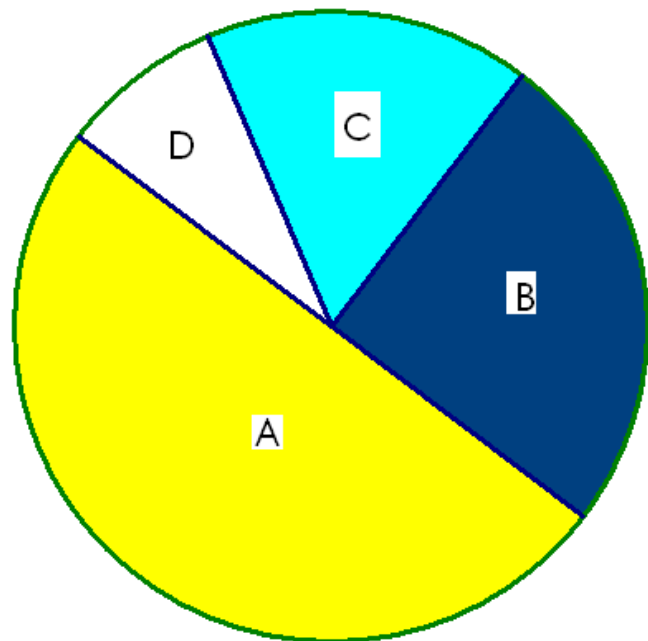
I. After you finish your homework and have eaten dinner you play a game of chance using the spinner below. Where the spinner lands determines how you will spend the evening.

- Sector A: Playing with your younger brother the whole evening
- Sector B: Half the evening playing with your younger brother and half the evening watching TV
- Sector C: Cleaning the birdcage, the hamster cage, and the aquarium the whole evening
- Sector D: Playing in a band in a friend's garage the whole evening

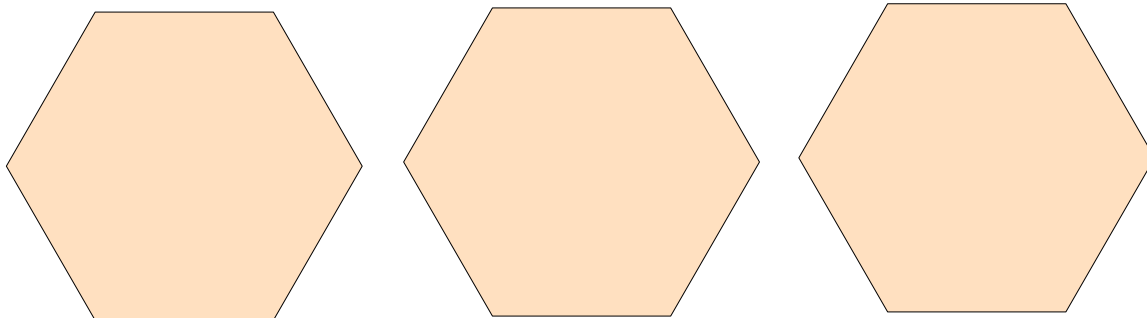
Spin the spinner 36 times and record your results in the table.

Sector	A	B	C	D
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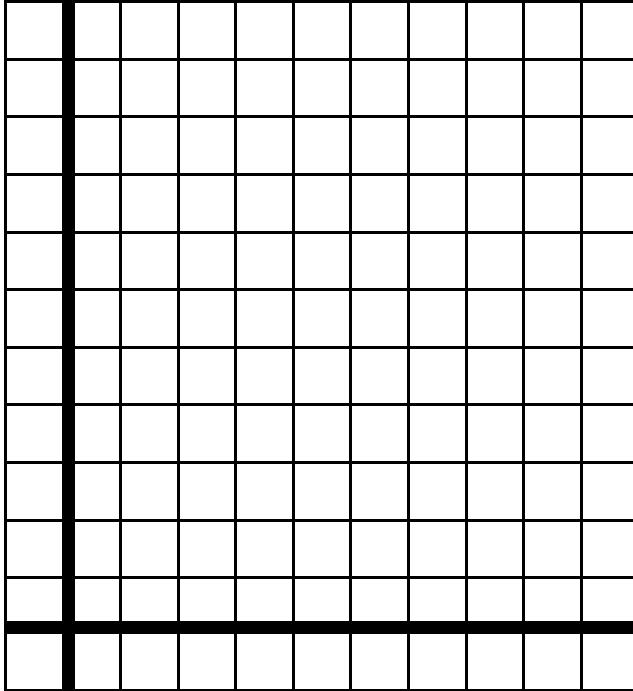
1. What is the probability you will have to play with your brother?
2. What is the probability you will be able to play in a band?



II. What is the probability of randomly selecting one of the shortest diagonals from all the diagonals of a regular hexagon?



- III. Jose graphs the points $(0,0)$, $(8,0)$, $(8,10)$, and $(0,10)$ and draws in the polygon. Jose then adds the line $y = x$ to the graph. Complete the graph of the polygon and straight line.



Jose wonders what the probability of picking point inside the rectangle where the x coordinate is larger than the y coordinate. Help Jose find this probability.

- IV. Nicki arrives at a bus stop at a random time each day. His bus stops there every 20 minutes between 6:00 and 8:00 a.m.
- A. Draw a number line that to show the stopping times. (Don't worry about how long the bus actually stops.)



- B. What is the probability that he will have to wait 5 minutes or more? How did you represent this on the number line?
- C. What is the probability that he will have to wait 10 minutes or more? How did you represent this on the number line?
- D. If the bus stops for exactly 3 minutes, how do your answers to question B and C change?

- V. In a recent street fair students were challenged to hit one of the small triangular regions on the large triangular board below with a ping pong ball. Find the probability of hitting a small triangle if the ping pong ball hits the large triangular region.

