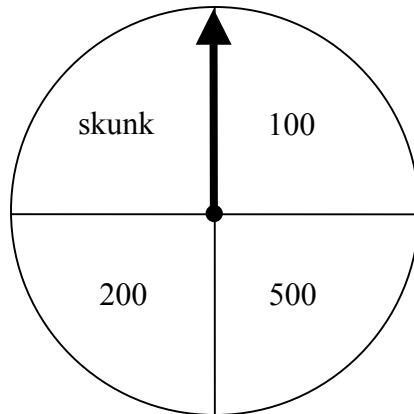


Adaptation of 2003 Statistics Form B question 5 for Middle Grades



Contestants on a game show spin a wheel like the one shown in the figure above. Each of the four outcomes on this wheel is equally likely and outcomes are independent from one spin to the next.

- The contestant spins the wheel.
- If the result is a skunk, no money is won.
- If the result is a number, the corresponding amount in dollars is won.

Note: $P(a)$ means the probability that a occurs.

1. $P(100) =$

2. $P(\text{not skunk}) =$

3. $P(200 \text{ or } 500) =$

4. $P(300) =$

5. $P(100 \text{ or } 200 \text{ or } 500 \text{ or skunk}) =$

6. $P(\text{contestant earns } < \$500) =$

7. $P(\text{contestant earns } > \$200) =$

8. $P(\text{contestant spins two skunks in a row}) =$

9. Do a simulation of 20 spins and record your results in the table below.

Individual spins	200	100	500	Skunk
Number of spins				
Percentage				

10. Collect the data from the entire class and record the results in the table below.

Pooled data	200	100	500	skunk
Number of spins				
Percentage				

11. Theoretically, what percentage of the spins should land on:

- a. 200?
- b. 100?
- c. 500?
- d. skunk?

12. Compare your experimental results to the theoretical results. How closely do they match?

13. On average, what is the expected payout? Why?

14. Based on the pooled experimental results, what is the average payout?