WHEEL OF FORTUNE

Is *Wheel of Fortune* rigged?
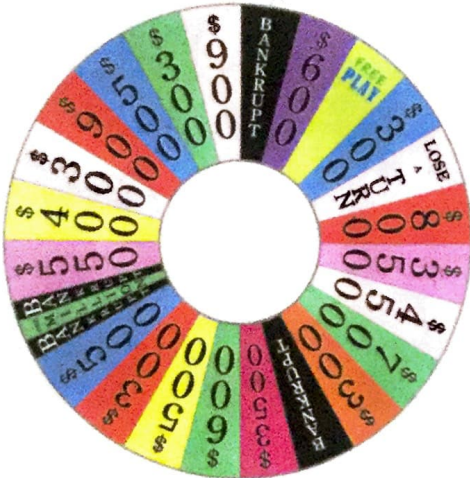
name _____

date _____

Acc Answer

Act One: Wheel...

A,B,C
HCC

1 In the game show *Wheel of Fortune*, contestants spin a wheel to determine how much money they'll win. To the nearest percent, how often do you expect the wheel to land on each of the following amounts?

$\frac{1}{3} \div \frac{24}{1}$

$\frac{1}{3} \times \frac{1}{24} = \frac{1}{72}$

Amount	$300	$350	$400	$450	$500
Pieces	$\frac{5}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{3}{24}$
Percent	21% 20.8%	4%	4%	4%	13%
Amount	$550	$600	$700	$800	$900
Pieces	$\frac{1}{24}$	$\frac{2}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{2}{24}$
Percent	4%	8%	4%	4%	8%
Amount	$3500	$1 million	Free Play	Lose Turn	BANKRUPT
Pieces	$\frac{1}{24}$	$\frac{\frac{1}{3}}{24}$ $\frac{1}{72}$	$\frac{1}{24}$	$\frac{1}{24}$	$2\frac{2}{3}$ $\frac{8}{3} \div \frac{24}{1}$ $\frac{1}{24}$ $\frac{8}{3} \times \frac{1}{24}$ $\frac{1}{9}$
Percent	4%	1%	4%	4%	11%

B,C

2 Pick one of the percents above and explain what it means within the context of *Wheel of Fortune*.

It is really difficult to get $1 mill. → only 1%. Most likely to get $300

ABC
Acc

3 If you watched an episode of *Wheel of Fortune*, what would need to happen for you to be suspicious that the show was rigged? Explain.

If a contestant gets bankrupt 50% of the time!

ABC
4. You get to spin 2 times! What is the chance of getting a $300 and then a $900?

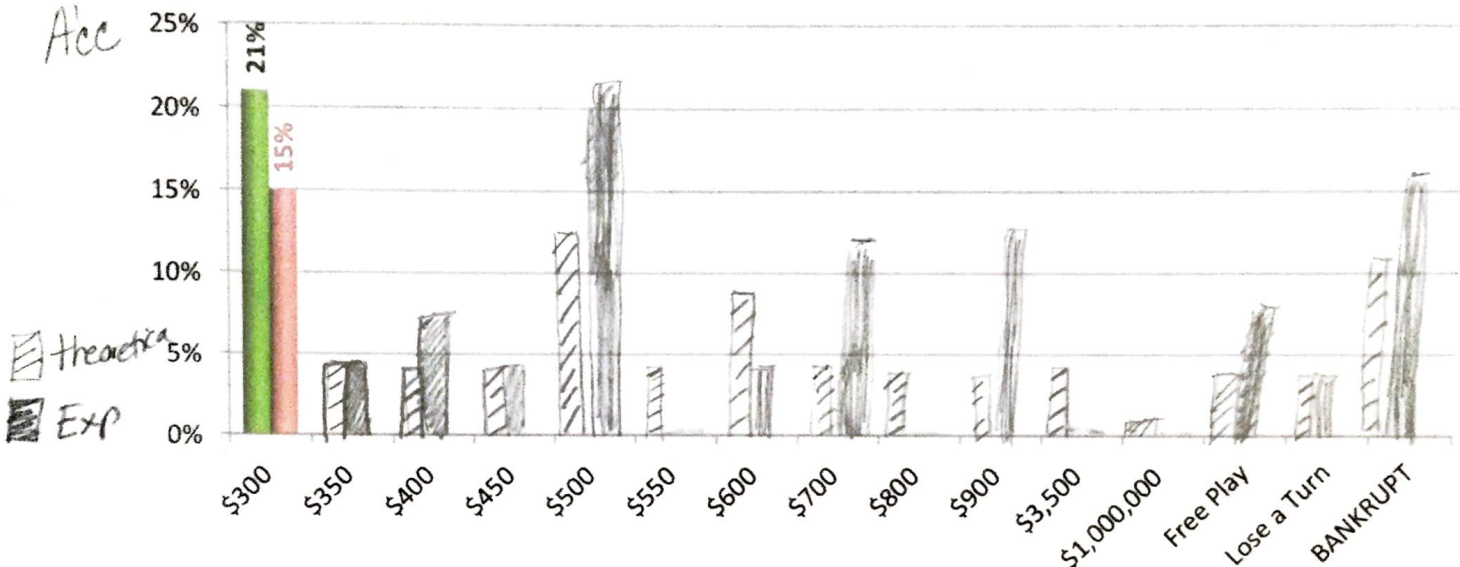$\frac{5}{24} \times \frac{2}{24} = \frac{5}{288} = .02 = 2\%$

Act Two: ...of Fortune?

Acc

4 Below, graph the **theoretical probabilities** from before: how often you *expect* the wheel to land on each amount. Then, watch an episode of *Wheel of Fortune*, and keep track how many times the wheel lands on each piece.

When the show ends, calculate the **experimental probabilities** – how often, as a percent, the wheel *actually* landed on each amount – and graph them below. (The results for $300 have been done for you.)

Acc

theoretical
Exp

	$300	$350	$400	$450
A,B,C Acc	IIII IIII I		II	I
THI	$500	$550	$600	$700
			I	II
	$800	$900	$3,500	$1 million
		III		
	Free Play	Lose a Turn	Bankrupt	**Total Spins**
	II	I	IIII	**27**

A,B,C Acc 5 Based on your results, do you think that the game show *Wheel of Fortune* is rigged? Why or why not?

Bankrupt

$$\frac{4}{27} = 15\%$$ Not rigged.