The Multiplication Game

Roll 2 dice. Multiply the numbers.

If the answer is odd, player #1 gets a point.

If the answer is even, player #2 gets a point.

Roll the dice 36 times.

Name_		
Date		
Period_		

1) Predict whether or not you think this game is fair. Explain your prediction.

2) Play the game.

3) Roll Number	Product	Odd or even?	Roll Number	Product	Odd or even?	Roll Number	Product	Odd or even?
1		even:	13		even:	25		even:
2			14			26		
3			15			27		
4			16			28		
5			17			29		
6			18			30		
7			19			31		
8			20			32		
9			21			33		
10			22			34		
11			23			35		
12			24			36		

Player One Score		Player Two Score	Winner
3) Based on product?	your data, what is the	ne experimental probability of rollin	ng an odd product? An even
	P(odd) =	P(even) =	

4) Find all the possible products you can get when rolling two number cubes. Organize your data.

5) What is the theoretical probability of rolling an odd product? An even product? $P(\text{odd}) = \underline{\hspace{1cm}} P(\text{even}) = \underline{\hspace{1cm}}$

6) Is the multiplication game a fair game? Explain why or why not using probability.



A "Dozen or Nothing" Game



Roll one die

If the number is 1, player #1 gets 12 points. If the number is even, player #2 gets that number of points. If the number is a 3 or a 5, neither player receives a score.

Roll the dice 36 times.

Make a prediction:

Roll	Outcome	Points/Player	Roll	Outcome	Points/Player	Roll	Outcome	Points/Player
Number			Number			Number		
1			13			25		
2			14			26		
3			15			27		
4			16			28		
5			17			29		
6			18			30		
7			19			31		
8			20			32		
9			21			33		
10			22			34		
11			23			35		
12			24			36		

Player One Score	Player Two Score	Winner
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Is this a fair game? Explain why or why not using probability.

A Game of Chance—fair or not?

The Game: Helen and Simon are playing a game with one die each. If the roll is a 5 or 6, Helen gets the points on the die and Simon gets 0. If the roll is a 1, 2, 3, or 4, Simon gets the points on the die and Helen gets 0 points. The object of the game is to roll the die until someone reaches 20 points (or over) to win.

• Who do you think will win the game? Why?

Play the game a few times—keep a record of the games and the winners.

- Has your opinion changed or not? Explain.
- Is this game fair? Explain why or why not using probability.

KOII	Outcome	vvno	Total	winner
Number	(Points)	gets the	points	(20 points
		points?	for	total)
		'	player	,
			piayer	
				•