Name_____ Date _____

Chapter 10 **Performance Task** (continued)

Rubric

Fair and Unfair Carnival Games	Points	
1. about $33	**2**	Calculation correct
2. theoretical; It is the probability of an event occurring from a sample space of equally likely outcomes.	**2**	Probability and explanation correct
	1	Probability correct but explanation incorrect
3. For a student to lose with "Rock" $\frac{7}{8}$ of the time, the board should have 21 "Paper" envelopes, because solving $\frac{7}{8} = \frac{x}{24}$ results in $21 = x$; For a student to lose with "Rock" 50% of the time, the board should have 12 "Paper" envelopes, because solving $\frac{50}{100} = \frac{x}{24}$ results in $12 = x$.	**4**	Both correct answers that reference calculations
	2	One correct answer that references calculations
	1	Attempt at answers without reference to calculations
4. It would be a better choice for the player to not use all 24 envelopes if he or she wants the dollar back; It would be a better choice for your team to use all 24 envelopes in order to raise more money; The player has a $\frac{1}{3} \approx 0.33$ probability of winning using "Rock" when all 24 cards are being used. The player has a $\frac{8}{23} \approx 0.35$ probability of winning using "Rock" if one of the cards that says "Rock" is removed.	**4**	Two correct arguments for the player and the game operators that references calculations
	2	One correct argument for the player or the game operators that references calculations
	1	Argument that references no calculations
5. *Sample answer:* A student rolls a number cube with 1 even number and 5 odd numbers on it. If the roll is an odd number, the student donates $1 to the fundraiser; $\frac{1}{6}$; $\frac{1}{3}$	**4**	Thoughtful game that references probabilities
	2	Well-written game without reference to probabilities
	1	Poorly written game without reference to probabilities
Mathematical Practices: Create sound arguments and analyze the arguments of others. Students will make their own "unfair" carnival games based on theoretical probabilities and evaluate their classmates' games as well.	**4**	The student uses knowledge of all types of probabilities to create his or her own game as well as critique and play classmates' games. Award partial credit as needed.
Total Points	**20 points**	