

## Carnival Game Tycoon Lecture Notes: Lesson 5

Name: \_\_\_\_\_

Delta College STEM Explorer

Hour: \_\_\_\_\_

### I. Expected Values

A. Defined: The \_\_\_\_\_ of a game is sum of all of the \_\_\_\_\_ of each value of each outcome and the corresponding probability of that outcome.

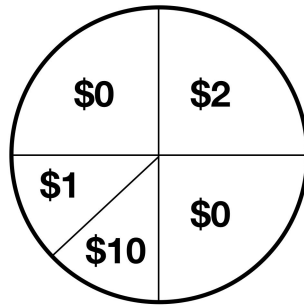
B. Formula: \_\_\_\_\_ until \_\_\_\_\_ outcomes are accounted for

1.  $X$  = the \_\_\_\_\_ of the outcome
2.  $P$  = the \_\_\_\_\_ of the outcome

C. Application to Games:

1. Knowing the Expected Value is important for planning \_\_\_\_\_ games or determining if games are worth \_\_\_\_\_.

2. Example "Spinner Game"



3. Use of \_\_\_\_\_

Outcomes	
Probabilities	

4. Solving for E (Expected Value):

5. \_\_\_\_\_ of the Expected Value #: In this scenario, the Expected Value of \_\_\_\_\_ means that you can \_\_\_\_\_ to win \_\_\_\_\_ on average \$.875 per \_\_\_\_\_. This is a \_\_\_\_\_ game for the player and a \_\_\_\_\_ game for the house.