**Carnival Game Tycoon Lecture Notes: Lesson 4 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Delta College STEM Explorer

I. **Discrete Probability Distributions**- defining the elements

 A. Discrete: An **\_\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_** value. Ex. U.S paper currency is divided into **\_\_\_\_\_\_\_\_\_\_\_** monetary values; $1, $2, $5, $10...

B. Probability Distribution: a representation of data (usually **\_\_\_\_\_\_\_\_\_**) that shows the likelihood of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of a random variable (X) in a chance experiment.

C. Random Variable: a variable that is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** by the outcome of a **\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. Ex. Rolling a die: The chance that the random variable will = **\_\_** is ⅙. But it could also end up being 1,2,3,5, or 6.

II. **Examples of discrete probability distributions**

1. Rolling 2 dice and adding up the **\_\_\_\_\_\_\_\_\_\_**.
2. How many times hospital patients **\_\_\_\_\_\_\_** their buzzers for assistance during the night
3. How many times **\_\_\_\_\_\_\_\_\_\_\_\_** are awakened by **\_\_\_\_\_\_\_\_\_\_\_\_\_** during the night

III. **Examples of non-discrete probability distributions**

1. **\_\_\_\_\_\_\_\_\_\_** tree height in Michigan
2. Eyelash length of **\_\_\_\_\_\_\_\_\_** in Uganda
3. **\_\_\_\_\_\_\_\_\_\_** of a population of males in Ohio

IV: **A Practical Example: Results of flipping three coins**

1. All possible outcomes of three flips:

**\_\_\_\_\_**, **\_\_\_\_\_**, **\_\_\_\_\_**, **\_\_\_\_\_**, **\_\_\_\_\_**, **\_\_\_\_\_**, **\_\_\_\_\_**, **\_\_\_\_\_**

 **\_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_**

1. **P(X=x) 0 1 2 3**

 **⅛(\_\_\_\_\_) ⅜(\_\_\_\_\_) ⅜(\_\_\_\_\_) ⅛(\_\_\_\_\_)**