**Binomial Probability**

**Goals:**

Student will gain a deeper understanding of how to calculate the probability of an event that occurs more than once.

**Objectives:**

Given a percentage of success and an exact number of occurrences, student will calculate the likelihood of the exact number of occurrences actually occurring with 80% accuracy.

Given a “Choose” operation, student will calculate the number of different possibilities with 80% accuracy.

**Materials:**

Paper Ball

Trash Bin

Calculator

**Lesson starts here**

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

**Binomial probability**

What is the probability you will make three out of five free throws into a basket?

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Binomial distribution formula for finding percentage of likelihood with exact end results.

Formula:

Where:

Example 1:

When rolling a die 100 times, what is the probability of rolling a "4" exactly 25 times (rounded to thousandths decimal place)?

Example 2:

A test consists of 10 multiple choice questions with five choices for each question.  As an experiment, you GUESS on each and every answer without even reading the questions.

What is the probability of getting exactly 6 questions correct on this test (rounded to thousandths decimal place)?

Question: What is the probability that you will make three of the five baskets?

Procedure:

1) Take a crumpled piece of paper and a trash bin.

2) Attempt to throw the paper ball from the designated spot into the designated can seven times.

3) Count the number of times you make a basket out of the seven attempts.

4) Calculate your percentage of success

5) Identify the n, p and r.

n=

p=

r=

6) Plug your numbers into the equation (Show your work!)

7) Succeed on the test

Extra practice:

1. The probability that Kyla will score above a 90 on a mathematics test is 4/5. What is the probability that she will score above a 90 on exactly three of the four tests this quarter?

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1. Which fraction represents the probability of obtaining exactly eight heads in ten tosses of a fair coin?