Single Point Binomials v. Interval Binomials

- Single Point Binomials
    - By hand
        - We use the probability distribution function!

    - By calculator --> Binompdf
        - Components to know

            - ___ = _____

            - ___ = _____

            - ___ = _____

- Interval Binomials
    - By hand
        - We STILL use the probability distribution function BUT we use it for

            _____ wanted in the interval!
    - By calculator --> Binomcdf
        - This calculator function calculates and includes every point in an interval that resembles _____
        - Components to know

            - ___ = _____

            - ___ = _____

            - ___ = _____

- Other formulas for Binomial Random Variable
    - Mean

- o Variance

- o Standard Deviation

<u>Practice</u>

1. A baker considers a cookie batch successful when 3 quarters of the batch of chocolate chip cookies has no less than 5 chocolate chips in each cookie. Each day, on average, the baker makes 8 batches of chocolate chip cookies (with each batch having 24 cookies) and only 6 are usually considered successes. Solve the questions below by hand.

   a. What is the probability of success and failure? (Hint: pay attention to the batches and not the number of cookies.)

   b. Write the probability function.

   c. What is the probability of 5 successes?

   d. What is the probability of more than 2 but at most 4 successes?

   e. What is the probability of less than 2 or of 7 successes?

f. What is the mean, variance, and standard deviation?

2. The Wingstop franchise expects that every order is completed after 12 minutes from receiving the order. On average, the Stephenville location meets expectations on 84% of all orders received each day. Solve the questions below by calculator if Wingstop in Stephenville had a total of 356 orders throughout the day.
    a. What is the probability of success and failure?

    b. Write the probability function.

    c. What is the probability of 281 successes?

    d. What is the probability of at most 300 successes?

    e. What is the probability of more than 250 successes but less than 320 successes?

f. What is the probability of less than 108 or more than 280 successes?

g. What is the mean, variance, and standard deviation?