**Math 1040 Skittles Project Worksheet**

For your own single 2.17-ounce bag of Skittles, record the numbers in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of red candies | Number of orange candies | Number of yellow candies | Number of green candies | Number of purple candies |
|  |  |  |  |  |

Using the data compiled from the entire class, record the following information:

The total number of candies in the sample = \_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Number of red candies | Number of orange candies | Number of yellow candies | Number of green candies | Number of purple candies |
|  |  |  |  |  |  |
| Proportion |  |  |  |  |  |

**Throughout this entire project, use decimals rounded to three places**

**for all of your proportions. Do not use percents.**

The total number of candies in your own single 2.17-ounce bag of Skittles = \_\_\_\_\_\_\_

The total number of bags in the sample collected by the entire class = \_\_\_\_\_\_\_\_

The total number of candies in the sample collected by the entire class = \_\_\_\_\_\_\_\_\_

For the entire sample:

$\overbar{x}$ = \_\_\_\_\_\_\_ (the mean number of candies per bag rounded to 1 decimal place)

s = \_\_\_\_\_\_\_ (the std. deviation of the number of candies per bag rounded to two decimal places)

5- number summary: (round to one decimal place where necessary)

Fill in the appropriate values on this page and keep it handy as you do your calculations.

**Quick Reference for Confidence Intervals**

 For the interval estimate of the proportion of yellow candies:

 *n* = \_\_\_\_\_ *x* = \_\_\_\_\_ $\hat{p}$ = \_\_\_\_\_ α = \_\_\_\_\_

 For the interval estimate of the mean number of candies in a bag:

 *n* = \_\_\_\_\_ $\overbar{x}$ = \_\_\_\_\_ α = \_\_\_\_\_

 For the interval estimate of the standard deviation of the number of candies in a bag:

 *n* = \_\_\_\_\_ *s* = \_\_\_\_\_ α = \_\_\_\_\_ $X\_{R}^{2}$ = \_\_\_\_\_\_ $X\_{L}^{2}$ = \_\_\_\_\_\_

**Quick Reference for Hypothesis Tests**

 For testing the claim that 20% of Skittles are red:

 *n* = \_\_\_\_\_ *x* = \_\_\_\_\_ $\hat{p}$ = \_\_\_\_\_ α = \_\_\_\_\_

 $H\_{0}$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ $H\_{1}$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 For testing the claim that the mean number of Skittles in a 2.17-oz. bag is 55:

 *n* = \_\_\_\_\_ $\overbar{x}$ = \_\_\_\_\_ α = \_\_\_\_\_

 $H\_{0}$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ $H\_{1}$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_