ICM Notes Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.3 Variance & Standard Deviation

Let X and Y denote the random variables whose values are the weights of the brand X and brand Y potato chips. Draw a histogram for each brand and find the expected value.





*Variance* is a measure of the spread of the data. The larger the variance, the larger the spread.

Suppose a random variable has the probability distribution

and expected value E(X) = μ, the variance is defined as:



Find the variance of the weights of brand X and brand Y potato chips.

*Standard deviation* is a measure of the spread of the data using the same units as the data.

The *standard deviation* of a random variable *X* is defined as:



Find the standard deviation of the weight of brand X and brand Y.

To find standard deviation and mean in TI- 83/84plus:

* Type X values (values of random variable) in L1.
* Type probability distribution or frequencies in L2 (it will work for either!!)
* Then press STAT, choose CALC, 1-Var Stats, L1, L2, ENTER

x = the mean and σx = the standard deviation.

\*If you are asked variance, what should you do?