//create a formula sheet of all the formulas we use in this class

//all of formulas in a formula sheet generated by us

//check all the grey boxes going through the text

**Kaden Fuller-Aujla**

**Formula Sheet**

**Definition 1.1**

The mean of a sample of n measured responses … is given by

The corresponding population mean is denoted mu

**Definition 1.2**

The variance of a sample of measurements y1, y2,..., yn is the sum of the square of the differences between the measurements and their mean, divided by n − 1. Symbolically, the sample variance is

The corresponding population variance is denoted by the symbol σ2.

**Definition 1.3**

The standard deviation of a sample of measurements is the positive square root of the variance; that is,

The corresponding population standard deviation is denoted by

**Definition 2.1**

An *experiment* is the process by which an observation is made

**Definition 2.2**

A *simple event* is an event that cannot be decomposed. Each simple event corresponds to one and only one *sample point.* The letter *E* with a subscript will be used to denote a simple event or the corresponding sample point.

**Definition 2.3**

The *sample space* associated with an experiment is the set consisting of all possible sample points. A sample space will be denoted by *S.*

**Definition 2.4**

A *discrete sample* space is one that contains either a finite or a countable number of distinct sample points.

**Definition 2.5**

An *event* in a discrete sample space *S* is a collection of sample points—that is, any subset of *S*.

**Definition 2.6**

Suppose *S* is a sample space associated with an experiment. To every event *A* in *S* (*A* is a subset of *S*), we assign a number, *P(A),* called the probability of *A*, so that the following axioms hold:

Axiom 1: *P(A) ≥* 0.

Axiom 2: *P(S)* = 1.

Axiom 3: If … form a sequence of pairwise mutually exclusive events in

*S* (that is, then

**Definition 2.7**

An ordered arrangement of *r* distinct objects is called a *permutation.* The number of ways of ordering *n* distinct objects taken *r* at a time will be designated by the symbol .

**Definition 2.8**

The number of *combinations* of *n* objects taken *r* at a time is the number of subsets, each of size *r,* that can be formed from the *n* objects. This number will be denoted by .