

C-N M201, 208 and 406 Key

B. A. Starnes, 3 - 31

| Color | Meaning | Example |
|-------------|-------------------------|--|
| Red | Significant Truth | Proverbs 16 33 The lot is cast into the lap; but the whole disposing thereof is of the LORD. |
| Royal Blue | Pay attention Truth | The <i>probabilities of 0 and 1 belong solely to God.</i> |
| Navy Blue | Mathematical Expression | $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ |
| Green | Definition | The events Male and Female are considered to be disjoint ... that is they cannot occur simultaneously. |
| Olive Green | Student Problem | A5. Suppose $P(A B) = .35 = P(B A)$, and $P(B) = .3$. Find $P(A \cap B)$ and $P(A \cap B^c)$ |

| Symbol | Meaning | Example |
|-------------------------------|---|--|
| = | is equal to | $\alpha = .05$ |
| ~ | is isomorphic with is described with | |
| $\alpha, \delta, \varepsilon$ | has the distribution small real number | $X \sim N(3, .01)$ If $\varepsilon = .05$, choose $\delta = .01$ |
| Δ | differential | rate = $\Delta y / \Delta x$ |
| e | Euler's number (irrational) | 2.718281828459 ... |
| \in | is an element of | $j \in \mathbb{N}$ |
| f, g, h | generally used for functions | $g(r, s); r, s \geq 100$ |
| \forall | for all | $x^2 + y^2 < 36 \forall -6 < x, y < 6$ |
| ϕ | the Golden ratio (irrational) | 1.618033988749 ... |
| i, j, k | Index of a natural sequence | For $i = 1$ to n , $c_i = 3 + 2i$ |
| \mathcal{L} | limfinity (the limit as n goes to ∞) | $\mathcal{L} \sqrt{((n-1)/(n-3))} = 1$ |
| μ | the mean of an rv | $X \sim N(3, .01) \Rightarrow \mu = 3$ |
| n | particular natural number | For $i = 1$ to n , $c_i = 3 + 2i$ |
| \mathbb{N} | the set of Natural numbers | $\{1, 2, 3, \dots\}$ |
| N | the Normal distribution | $X \sim N(3, .01)$ |
| \Rightarrow | then | $c_i = 3 + 2i \Rightarrow c_3 = 9$ |
| \Leftrightarrow | if and only if | $(x-2)(x-3) = 0 \Leftrightarrow x = 2 \text{ or } 3$ |
| $\stackrel{?}{=}$ | Is it equal to? | $36 \stackrel{?}{=} x^2 + y^2 \forall -6 \leq x, y \leq 6$ |

C-N M201, 208 and 406 Key
B. A. Starnes, 3 - 31

| Symbol | Meaning | Example |
|--------------|--|---|
| π | ratio of circumference to diameter of a circle, OR, in stats, true probability | 3.14159265 ... , OR $\pi = .75$. |
| p | sample probability | $p = 13/20 = .65$ |
| r, s, t | large continuous variables | $g(r, s); r, s \geq 100$ |
| ρ | correlation between rvs | $\rho = .4$ |
| \mathbb{R} | the set of Real numbers | $r, s, t \in \mathbb{R}$ |
| rv | random variable | $X \sim N(3, .01)$ |
| σ | standard deviation | $X \sim N(3, .01) \Rightarrow \sigma = .01$ |
| τ | ratio of circumference to radius of a circle | 6.28 ... |
| Z | the standard Normal rv | $Z \sim N(0, 1)$ |

| Term | Meaning | Example |
|-----------------|--|--|
| continuousesque | a discrete rv treated as a continuous rv | The price of the van is a continuousesque rv |
| dim | the dimensionality of a set | $\dim(\text{Gordon line}) = 1$ |
| Domainsion | the dimension of the domain | $\text{Domainsion} = \text{nullity} + \text{rank}$ |
| ESAA | Strat-O-Matic and APBA Sim Sports organization | Auburn is the defending ESAA football champion |
| Gordon line | 45° diagonal line passing up from L to R through O | the graph of $y = x$ is the Gordon line |
| kernel | the set of the domain that maps to the 0 of the range | the Gordon line has a kernel of $\{0\}$ |
| nullity | the dimension of the kernel | $\text{nullity} = 0 \Rightarrow \text{kernel consists of 1 vector}$ |
| rank | the dimension of the range | $\text{rank} = \text{domainsion} \Rightarrow \text{transform is } 1 - 1$ |
| 1 - 1 | a transform in which every element of the domain is mapped a unique element of the range | the Gordon line represents a 1 - 1 function |

C-N M201, 208 and 406 Key
B. A. Starnes, 3 - 31

| Term | Meaning | Example |
|----------------|---|---|
| chisq | A Chi Square rv | $Y \sim \text{chisq}(5)$ |
| nisomorphism | A near isomorphism of a significantly complex earth structure (stadium, school, etc) > 7 mi from the original one | In Hawkins county TN, Cherokee HS is a nisomorphism of Volunteer HS |
| \bar{X}_n | a sample mean from a sample of size n of the rv X | \bar{X}_{25} is likely a better estimate than \bar{X}_{15} |
| $X_{1-\alpha}$ | the 1- α percentile of a rv X | $Z_{.95} = 1.645$ |
| trulum | an individual having a given truniversity (pl trulumni) | Mr. Cate is a trulum of the Univ of Tennessee |
| truniversity | where a person, or their youngest male descendant began his university study | Mr Cate's truniversity is the Univ of Tennessee |