**TI Calculator commands for AP Stats**

**List:** Entering data

Stat → edit, then type data in lists (ideally L1 since your calculator defaults to this)

**Stat Plot:** Graphs Scatterplots, histograms, and boxplots

2nd → y= → Plot 1, turn to on, push enter on the graph you want, choose the appropriate Xlist (and Ylist for scatterplots) → zoom → ZoomStat (make sure y = is cleared out)

 **1 – Var Stats:** Finding mean, standard deviation, and 5 number summary.

Enter data in L1 → stat → calc → 1 – Var Stats

**normalcdf:** Gives the area (proportion/probability) to the left of a given z score.

2nd → Vars → normalcdf (lower bound, upper bound, µ, σ)

**invNorm:** Gives the z score with a given area to the left (percentile).

2nd → Vars → invNorm (area to the left of z, µ, σ)

**LinReg (a + bx):** Gives the equation of the least-squares regression line, correlation, and coefficient of determination.

Enter data into **List** L1 and L2 → stat → calc → LinReg (a + bx)

* *NOTE: if r and r2 do not show up, go to 2nd → 0 → DiagnosticON*

**randInt(:** Produces random integers (i.e., as for use in determining an SRS).

Math → PRB → randInt(lower bound, upper bound, n)

**nCr:** Binomial Coefficent –number of ways to arrange r successes among n observations.

In blank screen type value for n → Math → PRB → nCr → Enter, then type value for r.

**binompdf:** Gives P(X=k) if n=number of trials, p = probability of success, and k= value of interest of a binomial random variable X.

2nd → Vars → binompdf (n, p, k)

**binomcdf:** Gives P(X≤k) if n = number of trials, p = probability of success, and k = value of interest and less of a binomial random variable X.

2nd → Vars → binomcdf (n, p, k)

**geometpdf:** Gives P(Y=k) if p = probability of success and k = value of interest of a geometric random variable Y.

2nd → Vars → geometpdf(p, k)

**geometcdf:** Gives P(Y≤k) if p = probability of success and k = the value of interest and less of a geometric random variable Y.

2nd → Vars → geometcdf (p, k)

**1-PropZInt:** Gives a 1 sample confidence interval for a population proportion, p, where x = # of successes, n = sample size, and C-Level = the confidence level as a decimal.

Stat → Tests → 1-PropZInt (x, n, C-Level)

**invT:** Gives the t critical value (t\*) given the area to the left of t\* and df = degrees of freedom.

2nd → Vars→ invT (area to the left of t\*, df)

* Note: not all TI calculators have this function. If not, use the worst case scenario t\* by rounding down the df in your table B.

**TInterval:** Gives a 1 sample confidence interval for a population mean, µ, where $\overbar{x}$ = sample mean, Sx = sample standard deviation, n = sample size, C-Level = the confidence level as a decimal (If you are given data, you can enter it into L1 and perform the CI).

Stat → Tests → TInterval ($\overbar{x}$, Sx, n, C-Level)

**1-PropZTest:** Gives a 1 sample significance test for a population proportion, p0. This function gives the critical value, z\*, and the p-value, p, when you are given p0 = null hypothesized value, x = number of successes, n = sample size, and the appropriate direction of the alternative hypothesis, Ha is selected.

Stat → Tests → 1-PropZTest (p0, x, n, choose direction of Ha, calculate)

* Note: You may also click on draw to see the area (p-value) you are trying to find which is always good to draw on the AP exam.

**tcdf:** Gives the area (p-value) under a t-distribution curve given t\* = t critical value and df = degrees of freedom

2nd → Vars → tcdf(lower bound, upper bound, df)

**T-Test:** Gives a 1 sample significance test for a population mean, µ0. This function gives the critical value, t\*, and the p-value, p, when you are given µ0 =null hypothesized value, $\overbar{x}$ = sample mean, Sx = sample standard deviation, n = sample size, and the appropriate direction of the alternative hypothesis, Ha is selected.

Stat → Tests → T- Test (µ0,$\overbar{ x}$, Sx, n, choose direction of Ha, calculate)

* Note: You may also click on draw to see the area (p-value) you are trying to find which is always good to draw on the AP exam.

**2-PropZInt:** Gives a 2 sample confidence interval for the difference in population proportions, p1 – p2 given x1 = # of successes from 1st population, n1 = sample size from 1st population, x2 = # of successes from 2nd population,n2 = sample size from 2nd population2, and C-Level = confidence level as a decimal.

Stat → Tests → 2-PropZInt (x1, n1, x2, n2, C-Level)

**2-PropZTest:** Gives a 2 sample significance test for the claim H0: p1 – p2 = 0. This functions gives the critical value, z\* and the p-value, p, when given x1 = # of successes from 1st population, n1 = sample size from 1st population, x2 = # of successes from 2nd population, n2 = sample size from 2nd population, and the appropriate direction of the alternative hypothesis, Ha is selected.

Stat → Tests → 2-PropZTest (x1, n1, x2, n2, choose direction of Ha, calculate)

* Note: You may also click on draw to see the area (p-value) you are trying to find which is always good to draw on the AP exam.

**2-SampTInt:** Gives a 2 sample confidence interval for the difference in population means, µ1 - µ2 given $\overbar{x}$1 = sample mean from 1st population, Sx1= standard deviation from 1st population, n1 = sample size from 1st population, $\overbar{x}$2 = sample mean from 2nd population, Sx2 = sample standard deviation from 2nd population, n2 = sample size from 2nd population, C-Level = confidence level as a decimal (If you are given data, you can enter it into L1 and perform the CI).

Stat → Tests → 2-SampTInt ($\overbar{x}$1, Sx1, n1, $\overbar{x}$2, Sx2, n2, C-Level, “No” for pooled)

**2-SampTTest:** Gives a 2 sample significance test for the claim H0: µ1 - µ2 = 0. This function gives the critical value, t\* and the p value, p, when given $\overbar{x}$1 = sample mean from 1st population, Sx1= standard deviation from 1st population, n1 = sample size from 1st population, $\overbar{x}$2 = sample mean from 2nd population, Sx2 = sample standard deviation from 2nd population, n2 = sample size from 2nd population, and the appropriate direction of the alternative hypothesis, Ha is selected.

Stat → Tests → 2-SampTTest ($\overbar{x}$1, Sx1, n1, $\overbar{x}$2, Sx2, n2, choose direction of Ha, “No” for pooled, calculate)

* Note: You may also click on draw to see the area (p-value) you are trying to find which is always good to draw on the AP exam.

**χ2cdf:** Gives the area (p-value) from a Chi-Square distribution to the left of χ2 given χ2 = critical value and df = degrees of freedom.

2nd → Vars → χ2cdf (lower bound, upper bound, df)

**χ2GOF-Test:** Gives us the critical value, χ2 and p-value to the *right* of χ2, given L1 = list of observed counts, L2 = list of expected counts, and df = degrees of freedom.

Enter data into L1 and L2 → Stat → Tests → χ2GOF-Test(L1, L2, df)

* Note: You may also click on draw to see the area (p-value) you are trying to find which is always good to draw on the AP exam.
* Note: not all TI calculators have this function.

**χ2-Test:** Gives a significance test of the claim H0: No difference in the distribution of a categorical variable for several populations. This function gives the critical value, χ2, p-value, p, and the degrees of freedom, df , and the expected values in matrix B, [B], given matrix A, [A] = matrix of observed counts.

Stat → Tests → χ2 – Test([A], calculate)

**LinRegTInt:** Gives the confidence interval for the slope of the population (true) regression line given data in L1 and L2 and a C-Level = confidence level as a decimal.

Stat → Tests → LinRegTInt (XList, YList, C-Level)

* Note: not all TI calculators have this function.

**LinRegTTest:** Gives a significance test for the slope, β, of the population regression line

(H0: β = 0). This function gives us the t\* = t critical value, p = p-value, and df = degrees of freedom given data entered into L1 and L2 and the appropriate direction of the alternative hypothesis Ha.

Stat → LinRegTTest(XList, YList, choose direction of Ha, calculate)