MATH 1530 Elements of Statistics
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CALCULATOR TIPS
TI-83 OR TI-84

Random Numbers Ch 1

To compute 10 random numbers between 1 and 400, do the following:

1. Math
2. PRB
3. 5:randInt
4. randInt (1, 400, 10)

1-Var Stats Ch 3

Use 1-Var Stats to compute the

- Mean (sample and population are xbar)
- Standard deviation (sample = Sx and population = σ)
- Five Number Summary (min, Q1, med, Q2, max)
- Σx and Σx^2
- Sample size, n

1-Var Stats Ch 3

- Enter the following list of data into your calculator (Stat < Edit): 78.8, 76.6, 72.9, 72.7, 71.9, 70.2, 70.1, 69.1, 68.9, 68.8
- Stat < Calc < Enter < 2^{nd} < 1 < Enter
- This will put "1-Var Stats L1" on your calculator and then give you a long list of statistics

Linear Regression Equation, r and r^2 Ch4

- Stat > Edit
- Enter x values in L1
- Enter y values in L2
- Stat > Calc > 8
- LinReg(a+bx) L1, L2 > Enter

Be sure to turn your diagnostic on:
Catalog > Diagnostic On > Enter

Mean and Standard Deviation of DRV in Probability Distributions Ch 5

1. Enter y (or x) values into L_1 and P(Y=y) (or P(X=x)) values into L_2
2. Stat < Calc < 1-Var Stats L_1, L_2 Enter
3. is your μ and σx is your σ

Factorials Ch 5

100!

Using the calculator:

- Type “100”
- Math > Prb > 4: !
- Enter

Binomial Coefficients Ch 5

$$\binom{10}{2} = \frac{10!}{2!(10-2)!} = \frac{10!}{2!8!} = \frac{10 \cdot 9 \cdot 8!}{2 \cdot 8!} = \frac{10 \cdot 9}{2} = 45$$

Using the calculator:

- **Type "10"**
- **Math > Prb > 3: nCr**
- **Type "2"**
- **Enter**

Given z-score(s), find area Ch 6

To find the area between two given z-scores, do

1. 2^{nd} > Dist > 2
2. normalcdf(min z, max z) > Enter

*Use min=-5 for -∞ and max=5 for ∞

Find the area:

a) to the left of z=1.23 => normalcdf(-5,1.23)
b) To the right of z=-0.67 => normalcdf(-0.67,5)
c) Between z=-1.54 and z=3.18 => normalcdf(-1.54,3.18)

Given area, find z-score Ch 6

To find the z-score that has a set area to its left,

1. 2^{nd} > Dist > 4
2. invNorm(area) > Enter

Find the z-score where the area:

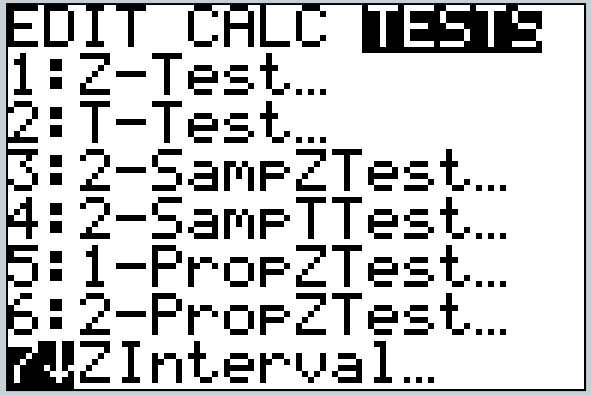
a) to the left of z is 0.9586 (invNorm(0.9586)=1.73)

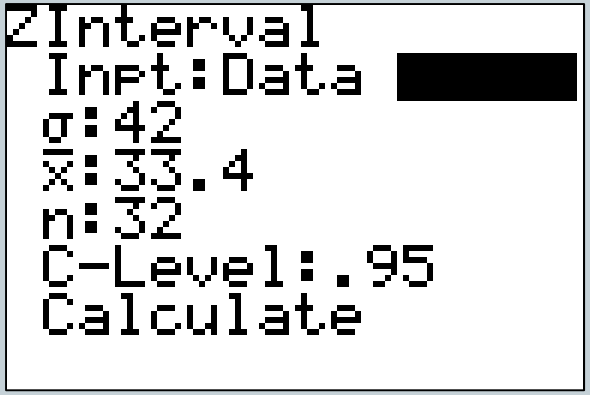
b) to the right of z is 0.8721 (invNorm(1-0.8721)=-1.14)

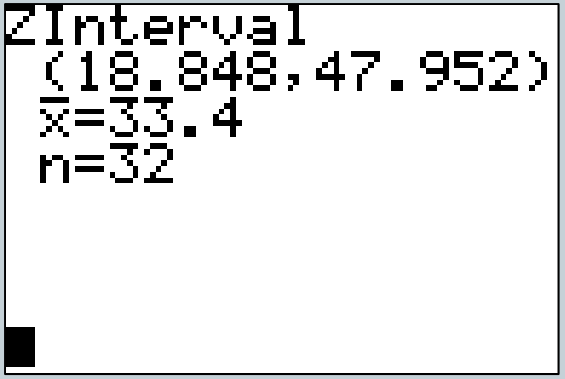
One Sample z-Interval (Text # 8.22) Ch 8

Using the calculator, you still must interpret your results!

- STAT < TESTS < 7:ZInterval
- Stats < ENTER
- Fill in sigma, xbar, n, and C-Level (**not** %)
- Calculate < ENTER







One Sample t-Interval w/o Knowing s and xbar (Text #8.63) Ch 8

- Enter data in L1 (Stat < Edit)
- Stat < Tests < 8:TInterval
- Inpt: Choose "Data"
- List: L1
- Freq:1
- C-Level: 0.95
- Calculate < Enter

122	166	171	148	135
173	137	163	119	144
164	153	162	140	142
158	130	167	173	186
92	170	126	163	172

Using the calculator, you still must interpret your results!

One Sample t-Interval Knowing s and xbar (Text #8.63) Ch 8

- STAT < TESTS < 8:TInterval
- Inpt: Stats < Enter
- xbar: 151.04 < Enter
- Sx: 22.01 < Enter
- n: 25 < Enter
- C-Level: 0.95 < Enter
- Calculate < Enter

122	166	171	148	135
173	137	163	119	144
164	153	162	140	142
158	130	167	173	186
92	170	126	163	172

Using the calculator, you still must interpret your results!

One Sample z-Test Ch 9

Your calculator can compute z-score and p-value

Enter data in L1

Stat < Tests < 1

- Inpt: Data
- Fill in μ_o, σ, list (L1), freq (1), and alternative type
- Calculate < Enter

1. State H_o, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret

One Sample t-Test Ch 9

Your calculator can compute t-score and p-value

Enter data in L1

Stat < Test < 2

- Inpt: Data
- Fill in μ_o, list (L1), freq (1), and alternative type
- Calculate < Enter

1. State H_o, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret

Two Sample t-Test Ch 10

- Stat < Tests < 4:2-SampleTTest
- Choose “Stats”, “xbar1”, “Sx1”, “n1”, “xbar2”, “Sx2”, “n2”, the appropriate alternative hypothesis, and “yes” or “no” for pooled
- Calculate < Enter

If σs are equal, do pooled. If not, do unpooled.

1. State H_o, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret

Two Sample t-Interval Ch 10

- Stat < Tests < 0:2-SampleTInt
- Choose “Stats”, “xbar1”, “Sx1”, “n1”, “xbar2”, “Sx2”, “n2”, the appropriate confidence level, and “yes” for pooled
- Calculate < Enter

If σs are equal, do pooled. If not, do unpooled.

Using the calculator, you still must interpret your results!

Paired t-Test Ch10

- Enter data in L1 and L2
- L1-L2 > "STO>" > L3 > Enter
- Stat > Tests > 2:T-Test…
- Choose "Data", "0" for μ_0, L3, 1, and the appropriate alternative hypothesis
- Calculate < Enter

1. State H_o, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret

Paired t-Interval Ch 10

- Enter data in L1 and L2
- L1-L2 > "STO>" > L3 > Enter
- Stat < Tests < 8:TInterval…
- Choose "Data", "L3", "1", and the appropriate confidence level
- Calculate < Enter

Using the calculator, you still must interpret your results!

One Sample Proportion z-Interval Ch 11

- Stat < Tests < ALPHA-A
  (1-PropZInt)
- Type x (the number of successes = 202 for Ex 11.3), n (sample size = 1010 for Ex 11.3), and C-level (=0.95 for Ex 11.3)
- Calculate < Enter

Using the calculator, you still must interpret your results!

One Sample Proportion z-Test Ch 11

- Stat < Tests < 5 (1-PropZTest…)
- Type p_0 (postulated population proportion), x (the number of successes), n (sample size = 1010 for Ex 11.3), and the appropriate alternative hypothesis
- Calculate < Enter

1. State H_0, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret

2 Sample Proportion t-Test Ch 11

- Stat < Tests < 6
  (1-PropZTest…)
- Type x1 (the number of successes = 276 men for Ex 11.9), n1 (sample size = 747 men), x2 (the number of successes = 195 women), n2 (sample size = 434 women), and the appropriate alternative hypothesis (<p_2)
- Calculate < Enter

1. State H_o, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret

2 Sample Proportion t-Interval Ch 11

- Stat < Tests < ALPHA-B

  (2-PropZInt)
- Type x1 (the number of successes = 276 men for Ex 11.10), n1 (sample size = 747 men), x2 (the number of successes = 195 women), n2 (sample size = 434 women), and C-level (=0.90)
- Calculate < Enter

Using the calculator, you still must interpret your results!

Chi-Square Independence Test Ch 12

- 2^{nd}–Matrix < Edit, and select [A]
- Type the number of rows in the contingency table, and press enter
- Type the number of columns in the contingency table, and press enter
- Type in the data from the contingency table, hitting "Enter" after each value
- Stat < Tests < Alpha-C
- Choose [A] for "Observed:" and [B] for "Expected:"
- Calculate

1. State H_o, H_a, α, p
2. Tell whether p <= α or not
3. Rejection decision statement
4. Interpret