Formula sheet for Final Review Dec 1, 2015

Problem 1 Chapter 3 Z-score: 

Table A applications (Ref: Handout of chap 3)

* P(Z < Z0) = P0
* P(Z> Z0) = 1 - P0
* If P(Z < Z1 ) = P1 and P(Z < Z2 ) = P2 **P( Z1 < Z < Z2) = P2 – P1**

Problem 2 Chapter 2 Box plot and five number summary: Min, Q1, M, Q3, Max

(Ref: slide 8 – 10 and so on)

 Call an observation a suspected **outlier** if it falls more than 1.5 × *IQR* above the third quartile

 Outlier > Q3 + 1.5 × *IQR IQR* = *Q*3 − *Q*1

Problem 3 Chapter 20 One-sample t test and confidence Interval

  **one-sample** *t* **statistic**

A level *C* **confidence interval for the mean** *μ:*



 **critical value** *t*\* is chosen so that the *t* curve with *n* – 1 degrees of freedom in Table C

* How to locate **critical value** *t*\* from Table C
* Df = n-1. If the calculated df not shown on Table C, then **down size** get the closest df in table c

Problem 4 Chapter 20 One-sample t test and matched pair problem

 Look the **difference** column and carry out one-sample t-test. Formula: as above

Problem 5 Chapter 21 Two-sample t test

 **Significance tests for *H*0: *μ*1 = *μ*2** are based on



* Compare n1 and n2, if n2 < n1 **df** = n2 -1 and get the p-value based on df, t statistic and Ha in Table C

Problem 6 Chapter 27 ANOVA

* Hypothesis: Chap 27, slide p9

* Condition of s: Smax /smin ≤ 2
* Locate p-value in the output of ANOVA,

if p-value < 0.05 reject Null hypothesis

* Pooled standard deviation: Sp = √MSE

Problem 7 Chapter 22 Proportion (Z Procedure)

* Level *C* **large-sample confidence interval for *p*** is
* 

(Locate Critical Z\* from the bottom line in Table C based on confidence level)

* **- Significance tests for *H*0: *p* = *p*0** are based on the *z* statistic



Problem 8 Chapter 22 Proportion

* - The **sample size** needed to obtain a confidence interval with margin of error *m* for a population proportion is



(general, suppose P\* = 0.50)

Problem 9 Chapter 25 Chi-square test

* The **expected count** in **any cell** is



* The **chi-square** **statistic** is

