

Math 488P/588 Homework 14

Due: Monday, 4/27/2015

NAME: _____

Reading Assignments - current Status:

Bluman:

- skimmed chapter 1
- Ch.2: sections 2.1, 2.2, 2.4
- Ch.3: sections 3.1, 3.2, 3.3 (the part about standard scores)
- all of Ch.4
- all of Ch.5
- all of Ch.6
- all of Ch.7
- Ch.8.1, 8.4
- all of Ch.10 - Regression

Hossain/Makhnin:

- Chapters 1 - 3.5
- Chapters 4.1 - 4.3 and 4.6
- Chapter 5
- Chapter 6.2, 6.4 (CLT)
- Chapter 8

Some chapters in H/M I have skipped and they will be assigned at a later date:

- H/M 3.7: Poisson Distribution
- H/M 4.4: Exponential distribution
- H/M 4.5.1: Poisson process, disregarding the link with the Gamma function

Reading Assignments: Reading due: Monday, 4/27/2015

Bluman:

- Ch.8: all you have not read yet
- Ch.9.1 - 9.3 - Testing of two means

Hossain/Makhnin:

- Chapter 9 - Regression

Problems on testing two means

Assignment 1:

A study investigated the connection between GPA and social networks usage of college students. The question of interest was whether or not students who use social networks (“useSN”) a lot have lower GPAs than those who don’t (“noSN”). Two samples were independently selected from students at a large public university. Although those samples were not selected at random (across all students of the university, they are representative of those groups. The following data were extracted from those samples.

Sample	Sample size	Sample mean	Sample stdev
useSN:	$n_1 = 141$	$\bar{x}_1 = 3.06$	$s_1 = 0.95$
noSN:	$n_2 = 68$	$\bar{x}_2 = 3.82$	$s_2 = 0.41$

a. useSN: $n_1 = 141$; $\bar{x}_1 = 3.06$; $s_2 = 0.95$

b. noSN: $n_2 = 68$; $\bar{x}_2 = 3.82$; $s_2 = 0.41$

Do the data indicate that use of social networks is detrimental to good GPA scores?

Assignment 2:

The effect of physical therapy on patients suffering from loss of movement in their elbows was the subject of a study.

The results were as follows:

Motion range:	1	2	3	4	5	6	7
Before treatment:	31	53	45	57	50	43	32
After treatment:	32	59	46	64	49	45	40

Does this collection of data give evidence that the treatment was effective?

Assignment 3:

A company collected data in two of their support divisions on how many customer calls they were handling per week. The chief of division 1 claimed that her people handled more incidents than those of the other division.

The results were as follows:

Sample	Sample size	Sample mean	Sample stdev
Division 1:	$n_1 = 1,200$	$\bar{x}_1 = 716$	$s_1 = 90$
Division 2:	$n_2 = 1,000$	$\bar{x}_2 = 555$	$s_2 = 75$

Does this collection of data give evidence to that claim made?