1. Calculate 2.4−1.96∗0.71√82

> 2.4-1.96\*0.71/sqrt(82)

[1] 2.246323

**Answer**:

1. Import a data file called “student” It has 10 variables (see Titanium).

(a) Save the file (see titanium) in your computer.

(b) **Import** the data file into RStudio.

(c) Type attach(student) to attach the data.

(d) Type head(student) in the command window

> attach(student)

> head(student)

GENDER AGE WORKHR TATTOO SHOES

1 FEMALE 18 20 NO 23

2 FEMALE 18 16 NO 12

3 FEMALE 18 20 NO 3

4 FEMALE 18 20 NO 6

5 FEMALE 18 16 NO 41

6 FEMALE 18 12 NO 9

EXERCISE GPA CLASS CARAGE

1 5 2.90 FRESHMAN 1

2 3 3.90 FRESHMAN 2

3 2 3.60 SOPHOMORE 16

4 2 3.81 FRESHMAN 7

5 0 3.40 FRESHMAN 14

6 0 3.30 SOPHOMORE 7

MARRIED

1 NO

2 NO

3 NO

4 NO

5 NO

6 NO

**3.** Create a **frequency table (1 variable)**

(a) Create a table for the variable GENDER by typing table(GENDER)

(b) Create a table for the variable MARRIED by typing table(MARRIED)

(c) How many female and male students are there?

(d) How many students are married?

(e) How many students have tattoos?

> table(GENDER)

GENDER

FEMALE MALE

264 191

> table(MARRIED)

MARRIED

NO YES

393 62

> table(TATTOO)

TATTOO

NO YES

356 99

**Answer:**

**(3c)** # Female students : 264

# Male students : 191

**(3d)** # Students are married : 62

**(3e)** # Students have tattoos : 99

**4.** Create a **contingency table (2 variables)**.

(a) Create a table using two variables CLASS and GENDER typing table(CLASS, GENDER)

(b) Create a table using two variables GENDER and MARRIED typing table(GENDER, MARRIED)

(c) How many female freshmen and male freshmen are there?

(d) How many married female students? How many unmarried male students?

(e) How many married freshmen are there? How many married seniors are there?

> table(CLASS, GENDER)

GENDER

CLASS FEMALE MALE

FRESHMAN 68 44

JUNIOR 63 56

SENIOR 34 18

SOPHOMORE 99 73

> table(GENDER, MARRIED)

MARRIED

GENDER NO YES

FEMALE 228 36

MALE 165 26

> table(CLASS, MARRIED)

MARRIED

CLASS NO YES

FRESHMAN 102 10

JUNIOR 104 15

SENIOR 33 19

SOPHOMORE 154 18

**Answer:**

**(4c)** # Female freshmen : 68

# Male freshmen : 44

**(4d)** # Married female students : 36

# Unmarried male students : 165

**(4e)** # Married freshmen : 10

# Married senior : 19

**5.** Create a **contingency table (3 variables)**.

(a) Create a table of CLASS by MARRIED for each GENDER by typing table(CLASS, MARRIED, GENDER)

(b) How many unmarried male sophomore are there? Married female seniors?

> table(CLASS, MARRIED, GENDER)

, , GENDER = FEMALE

MARRIED

CLASS NO YES

FRESHMAN 60 8

JUNIOR 55 8

SENIOR 22 12

SOPHOMORE 91 8

, , GENDER = MALE

MARRIED

CLASS NO YES

FRESHMAN 42 2

JUNIOR 49 7

SENIOR 11 7

SOPHOMORE 63 10

**Answer:**

**(5b)** # Unmarried male sophomore : 63

# Married female seniors : 12

**6. Summary Statistics.**

(a) Calculate the mean GPA (or average GPA) by typing mean(GPA)

(b) Calculate the average weekly work hour by typing mean(WORKHR),

(c) Calculate the median GPA by typing median(GPA)

(d) Calculate the median weekly work hour by typing median(WORKHR)

(e) What is the average GPA? Average weekly work hour?

(f) What is the median GPA? Median weekly work hour?

(g) What is the average car age? Average exercise hour?

> mean(GPA)

[1] 3.051692

> mean(WORKHR)

[1] 24.89451

> median(GPA)

[1] 3

> median(WORKHR)

[1] 25

> mean(CARAGE)

[1] 6.956044

> mean(EXERCISE)

[1] 4.36044

Answer:

**(6e)** Average GPA : 3.051692

Average weekly work hour : 24.89451

**(6f)** median GPA : 3

Median weekly work hour : 25

**(6g)** average car age : 6.956044

Average exercise hour? : 4.36044