Q1. How many male record groups and how many female record groups does the data have? [2 points]

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ cut -d ',' -f3 data.csv |  sort | uniq
FEMALE
MALE

hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ cut -d ',' -f3 data.csv |  sort | uniq | -c
-bash: -c: command not found

hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ cut -d ',' -f3 data.csv |  sort | uniq -c
     25 FEMALE
     36 MALE
```

Q2. A) How many white female groups are there? [2 points]

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ grep "WHITE" data.csv | grep "FEMALE" data.csv -c
25
```

Q2. B) Copy entire records of them to a new file where the records are organized by death count in descending order. [2 points]

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ sort -t ',' -k6 -nr data.csv | grep "WHITE" | grep "FEMALE" > white_female_death_desc.csv

hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ cat  white_female_death_desc.csv
2010,NON-HISPANIC WHITE,FEMALE,DISEASES OF HEART,5351,40
2010,NON-HISPANIC WHITE,FEMALE,MALIGNANT NEOPLASMS,3438,25
2010,NON-HISPANIC WHITE,FEMALE,INFLUENZA AND PNEUMONIA,707,5
2010,NON-HISPANIC WHITE,FEMALE,CHRONIC LOWER RESPIRATORY DISEASES,502,4
2010,NON-HISPANIC WHITE,FEMALE,CEREBROVASCULAR DISEASE,382,3
2010,NON-HISPANIC WHITE,FEMALE,ESSENTIAL HYPERTENSION AND RENAL DISEASES,219,2
2010,NON-HISPANIC WHITE,FEMALE,DIABETES MELLITUS,258,2
2010,NON-HISPANIC WHITE,FEMALE,ALZHEIMERS DISEASE,247,2
2010,NON-HISPANIC WHITE,FEMALE,SEPTICEMIA,107,1
2010,NON-HISPANIC WHITE,FEMALE,PSYCH. SUBSTANCE USE & ACCIDENTAL DRUG POISONING,75,1
2010,NON-HISPANIC WHITE,FEMALE,NEPHRITIS NEPHROTIC SYNDROME AND NEPHROSIS,90,1
2010,NON-HISPANIC WHITE,FEMALE,BENIGN AND UNCERTAIN NEOPLASMS,69,1
2010,NON-HISPANIC WHITE,FEMALE,ATHEROSCLEROSIS,74,1
2010,NON-HISPANIC WHITE,FEMALE,ACCIDENTS EXCEPT DRUG POISONING,164,1
2010,NON-HISPANIC WHITE,FEMALE,VIRAL HEPATITIS,32,0
2010,NON-HISPANIC WHITE,FEMALE,SHORT GESTATION/LBW,14,0
2010,NON-HISPANIC WHITE,FEMALE,PEPTIC ULCER,22,0
2010,NON-HISPANIC WHITE,FEMALE,PARKINSONS DISEASE,55,0
2010,NON-HISPANIC WHITE,FEMALE,MENTAL DISORDERS DUE TO USE OF ALCOHOL,16,0
2010,NON-HISPANIC WHITE,FEMALE,INTENTIONAL SELF-HARM (SUICIDE),61,0
2010,NON-HISPANIC WHITE,FEMALE,HUMAN IMMUNODEFICIENCY VIRUS DISEASE,24,0
2010,NON-HISPANIC WHITE,FEMALE,CONGENITAL MALFORMATIONS DEFORMATIONS,32,0
2010,NON-HISPANIC WHITE,FEMALE,CHRONIC LIVER DISEASE AND CIRRHOSIS,67,0
2010,NON-HISPANIC WHITE,FEMALE,CHOLELITHIASIS AND DISORDERS OF GALLBLADDER,19,0
2010,NON-HISPANIC WHITE,FEMALE,AORTIC ANEURYSM AND DISSECTION,22,0
```

Q3. A) List causes of death by their frequencies in descending order. [2 points]

// Diseases are displayed because there are different records for WHITE, BLACK, MALE and FEMALE combinations

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ sort -t ',' -k6 -nr data.csv | cut -d ',' -f4,6 | uniq -c
      1 DISEASES OF HEART,40
      1 DISEASES OF HEART,37
      1 MALIGNANT NEOPLASMS,28
      1 MALIGNANT NEOPLASMS,25
      1 MALIGNANT NEOPLASMS,23
      2 INFLUENZA AND PNEUMONIA,5
      1 HUMAN IMMUNODEFICIENCY VIRUS DISEASE,5
      1 CHRONIC LOWER RESPIRATORY DISEASES,4
      1 CHRONIC LOWER RESPIRATORY DISEASES,3
      1 CEREBROVASCULAR DISEASE,3
      1 INFLUENZA AND PNEUMONIA,3
      1 PSYCH. SUBSTANCE USE & ACCIDENTAL DRUG POISONING,2
      1 DIABETES MELLITUS,2
      1 CEREBROVASCULAR DISEASE,2
      1 ACCIDENTS EXCEPT DRUG POISONING,2
      1 ESSENTIAL HYPERTENSION AND RENAL DISEASES,2
      1 DIABETES MELLITUS,2
      1 ALZHEIMERS DISEASE,2
      1 PSYCH. SUBSTANCE USE & ACCIDENTAL DRUG POISONING,2
      1 VIRAL HEPATITIS,1
      1 SEPTICEMIA,1
      1 PARKINSONS DISEASE,1
      1 NEPHRITIS NEPHROTIC SYNDROME AND NEPHROSIS,1
      1 INTENTIONAL SELF-HARM (SUICIDE),1
      1 HUMAN IMMUNODEFICIENCY VIRUS DISEASE,1
      1 ESSENTIAL HYPERTENSION AND RENAL DISEASES,1
      1 CHRONIC LIVER DISEASE AND CIRRHOSIS,1
      1 BENIGN AND UNCERTAIN NEOPLASMS,1
      1 ALZHEIMERS DISEASE,1
      1 SEPTICEMIA,1
      1 PSYCH. SUBSTANCE USE & ACCIDENTAL DRUG POISONING,1
      1 NEPHRITIS NEPHROTIC SYNDROME AND NEPHROSIS,1
      1 BENIGN AND UNCERTAIN NEOPLASMS,1
      1 ATHEROSCLEROSIS,1
      1 ACCIDENTS EXCEPT DRUG POISONING,1
      1 VIRAL HEPATITIS,1
      1 SHORT GESTATION/LBW,1
      1 SEPTICEMIA,1
      1 NEPHRITIS NEPHROTIC SYNDROME AND NEPHROSIS,1
      1 MENTAL DISORDERS DUE TO USE OF ALCOHOL,1
      1 INTENTIONAL SELF-HARM (SUICIDE),1
      1 SHORT GESTATION/LBW,0
      1 PEPTIC ULCER,0
      1 MENTAL DISORDERS DUE TO USE OF ALCOHOL,0
      1 CONGENITAL MALFORMATIONS DEFORMATIONS,0
      1 ATHEROSCLEROSIS,0
      1 ASSAULT (HOMICIDE),0
      1 AORTIC ANEURYSM AND DISSECTION,0
      1 VIRAL HEPATITIS,0
```

Q3. B) What are the three most frequent causes of death for males and females? [2 points]

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ sort -t ',' -k6 -nr data.csv | grep "FEMALE"| cut -d ',' -f3,4,6 | head -3
FEMALE,DISEASES OF HEART,40
FEMALE,MALIGNANT NEOPLASMS,25
FEMALE,INFLUENZA AND PNEUMONIA,5
```

// head -3 displays first 3 values, but 2nd and 3rd values are same diseases with different number of deaths for WHITE MALES AND BLACK MALES. This is not desired.

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ sort -t ',' -k6 -nr data.csv | grep -w "MALE"| cut -d ',' -f3,4,6 | head -3
MALE,DISEASES OF HEART,37
MALE,MALIGNANT NEOPLASMS,28
MALE,MALIGNANT NEOPLASMS,23
```

// used head -4 to display one more disease with next highest death number. Tried awk as well, to ignore $1, but that didn't work as well. I know how to do this using for loop in programming languages. Hoping to learn loops for UNIX system during next video lecture.

```
hkman@LAPTOP-T7VLEGHT /cygdrive/c/Users/hkman/Desktop/Rutgers Sem 2/Problem solving with Data
$ sort -t ',' -k6 -nr data.csv | grep -w "MALE"| cut -d ',' -f3,4,6 | head -4
MALE,DISEASES OF HEART,37
MALE,MALIGNANT NEOPLASMS,28
MALE,MALIGNANT NEOPLASMS,23
MALE,INFLUENZA AND PNEUMONIA,5
```