\*READ IN THE DATA FROM ASSIGNMENT 1;

LIBNAME ass8 'C:\Users\BrewJR\Desktop\ass8';

**DATA** ass8.mydata;

SET ass8.fghm122;

RUN;

\*ASSIGN THE DATA TO &DAT;

%let dat=ass8.mydata;

RUN;

/\* TAKE A LOOK AT THE DATA \*/

**proc** **print** data=&dat (obs=**7**);

**run**;

\*OPTIONAL: OUTPUT DIRECTLY AS A PDF FILE/;

ods pdf file = "C:\Users\BrewJR\Desktop\ass8\ass8.pdf" notoc;

/\* PROBLEM 1. CREATE A NEW DATASET WHICH \*/

/\* -(a) Contains all of the original data plus the categorized version of BMI previously created \*/

/\* -(b) Creates a new variables called HBP (high blood pressure) which uses the groups defined above \*/

/\* -(c) Removes all individuals in the underweight BMI group AND all individuals with a BMI which is 40 or larger \*/

/\* 1(a) CREATE A BMIGROUP VARIABLE\*/

**data** &dat;

set &dat;

BMIGROUP=**.**;

if BMI<**18.5** then BMIGROUP=**1**;

if BMI >= **18.5** & BMI < **25** then BMIGROUP = **2**;

if BMI >= **25** & BMI < **30** then BMIGROUP = **3**;

if BMI >= **30** then BMIGROUP = **4**;

RUN;

/\* 1(b) CREATE HBP \*/

**data** &dat;

set &dat;

HBP=**.**;

if SYSBP >=**0** & SYSBP < **140** then HBP = **0**;

if SYSBP >= **140** then HBP = **1**;

RUN;

/\* 1(c) Remove all the individuals in the underweight BMI group AND all the individuals with a BMI which is 40 or larger\*/

**data** dat2;

set &dat;

if BMIGROUP = **1** then delete;

if BMI > **40** then delete;

run;

/\* TAKE A LOOK AT THE DATA AGAIN \*/

**proc** **print** data=dat2 (obs=**7**);

**run**;

/\* DONE WITH PROBLEM 1 \*/

/\*%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%\*/

/\* PROBLEM 2: UNADJUSTED ODDS-RATIOS PREDICTING THE OUTCOME HBP = YES \*/

/\* Using HBP as the outcome variable, predicting the probability that HBP = Yes, run simple logistic regression models

to obtain unadjusted odds ratios using the predictors:

-AGE

-BMI

-BMIGROUP (ref = normal)

-SEX (ref = male)

-BPMEDS (ref = no)

-PREVSTRK (ref = no)

For each model (in the order just listed), provide only the table of parameter estimates\*/

/\* AGE \*/

**proc** **logistic** data = dat2;

model HBP(event="1") = AGE;

**run**;

/\* BMI \*/

**proc** **logistic** data = dat2;

model HBP(event="1") = BMI;

**run**;

/\* BMIGROUP \*/

**proc** **logistic** data = dat2;

model HBP(event="1") = BMIGROUP;

**run**;

/\* SEX \*/

**proc** **logistic** data = dat2;

model HBP(event="1") = SEX;

**run**;

/\* BPMEDS \*/

**proc** **logistic** data = dat2;

model HBP(event="1") = BPMEDS;

**run**;

/\* PREVSTRK \*/

**proc** **logistic** data = dat2;

model HBP(event="1") = PREVSTRK;

**run**;

/\* DONE WITH PROBLEM 2 \*/

/\*%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%\*/

/\* PROBLEM 3. INVESTIGATE INTERACTION BETWEEN BPMEDS AND BMI

Run a logistic regression model using the predictors BMI, BPMEDS(ref="no"), and the interaction between

BMI and BPMEDS. Provide only the table of parameter estimates.\*/

/\* FIRST, CREATE AN INTERACTION TERM BETWEEN BMI AND BPMEDS \*/

**data** dat2;

set dat2;

intBMI\_BPMEDS = BMI \* BPMEDS;

run;

/\*NOW RUN THE MODEL \*/

**proc** **logistic** data = dat2;

class BPMEDS(ref="0") / param=ref;

model HBP(event="1") = BMI BPMEDS intBMI\_BPMEDS;

**run**;

/\* DONE WITH PROBLEM 3 \*/

/\*%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%\*/

/\*PROBLEM 4. THE FOLLOWING ANALYSIS ADDS VARIABLES TO THE PREVIOUS INVESTIGATION \*/

/\* Run a logistic regression modeul using the predictors AGE, SEX, PREVSTRK, BMI, BPMEDS (ref="no"),

and the interaction between BMI and BPMEDS. Provide only the table of parameter estimates \*/

**proc** **logistic** data = dat2;

class BPMEDS(ref="0") / param=ref;

class SEX(ref="1") / param=ref;

class PREVSTRK(ref="0") / param=ref;

model HBP(event="1") = AGE SEX PREVSTRK BMI BPMEDS intBMI\_BPMEDS;

**run**;

ods pdf close;

/\*%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%\*/