Program Summary - Assignment4.sas

Execution Environment

Author:	minhui.ivy.xie@gmail.com
File:	/home/u42894662/sasuser.v94/Class playgound/Assignments/Assignment4.sas
SAS Platform:	Linux LIN X64 3.10.0-693.21.1.el7.x86_64
SAS Host:	ODAWS01-USW2.ODA.SAS.COM
SAS Version:	9.04.01M6P11072018
SAS Locale:	en_US
Submission Time:	9/22/2019, 11:10:14 PM
Browser Host:	C-73-129-61-75.HSD1.MD.COMCAST.NET
User Agent:	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/76.0.3809.132 Safari/537.36
Application Server:	ODAMID02-PROD-US.ODA.SAS.COM

Code: Assignment4.sas

```
/* Problem 1 & 2 data */
DATA CLINIC;
    INPUT ID     $ 1-3 GENDER $ 4-4 RACE   $ 5-5 HR 6-8 SBP 9-11 DBP 12-14 N_PROC
       15-16;
    DATALINES;
001MW08013008010
002FW08811007205
003MB05018810002
004FB   10806801
005MW06812208204
006FB101   07404
007FW07810406603
008MW04811207006
009FB07719011009
010FB06616410610
;
RUN;

/* problem 1 procs */
proc univariate data=CLINIC plot;
TITLE 'Stem and Leaf Plot & Box plot for SBP';
var SBP;
run;

proc univariate data=CLINIC plot;
TITLE 'Stem and Leaf Plot & Box plot for DBP';
var DBP;
run;

/* problem 2 procs */
PROC SGPLOT DATA = CLINIC;
TITLE 'problem 2 bar chart for gender';
VBAR GENDER;
RUN;
```

```
PROC GCHART DATA= CLINIC;
TITLE 'problem 2 pie chart for gender';
PIE GENDER;
RUN;
QUIT;
```

```
proc gchart data= CLINIC;
title "problem 2 exploded 3d pie chart for gender";
pie3d GENDER /EXPLODE='M';
Run;

/* problem 3 procs */
```

```
PROC GCHART DATA=CLINIC;
TITLE 'Problem 3 chart 1';
VBAR GENDER / GROUP=RACE DISCRETE;
RUN;
```

```
PROC GCHART DATA=CLINIC;
TITLE 'Problem 3 chart 2';
VBAR HR / GROUP=GENDER MIDPOINTS=50 to 100 by 10;
RUN;

/* Problem 4 procs */
```

```
PROC PLOT DATA=CLINIC;
PLOT SBP*HR=RACE;
TITLE "Problem 4 (a)";
RUN;
```

```
PROC PLOT DATA=CLINIC;
PLOT SBP*DBP=GENDER;
TITLE "Problem 4 (b)";
RUN;
```

```
PROC SORT DATA=CLINIC;
   BY RACE;
RUN;
```

```
PROC GPLOT DATA=CLINIC;
   TITLE "Problem 4 (c)";
   BY RACE;
   PLOT SBP * HR = GENDER;
RUN;

/* Problem 5 procs */
```

```
PROC GCHART DATA=CLINIC;
TITLE 'problem 5 chart';
VBAR GENDER / SUBGROUP=RACE
       SUMVAR=N_PROC
       TYPE = SUM
```

Log: Assignment4.sas

Notes (29)

```
1          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
```

```
70
71          /* Problem 1 & 2 data */
72          DATA CLINIC;
73          INPUT ID     $ 1-3 GENDER $ 4-4 RACE   $ 5-5 HR 6-8 SBP 9-11 DBP 12-14 N_PROC
74          15-16;
75          DATALINES;

NOTE: The data set WORK.CLINIC has 10 observations and 7 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      user cpu time       0.01 seconds
      system cpu time     0.00 seconds
      memory              783.68k
      OS Memory           36776.00k
      Timestamp           09/23/2019 03:10:11 AM
      Step Count                        325  Switch Count  2
      Page Faults                       0
      Page Reclaims                     90
      Page Swaps                        0
      Voluntary Context Switches        10
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


86          ;
87          RUN;
88
89          /* problem 1 procs */
90          proc univariate data=CLINIC plot;
91          TITLE 'Stem and Leaf Plot & Box plot for SBP';
92          var SBP;
93          run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time           0.23 seconds
      user cpu time       0.13 seconds
      system cpu time     0.02 seconds
      memory              16869.93k
      OS Memory           46504.00k
      Timestamp           09/23/2019 03:10:11 AM
      Step Count                        326  Switch Count  1
      Page Faults                       0
      Page Reclaims                     3058
      Page Swaps                        0
      Voluntary Context Switches        293
      Involuntary Context Switches      1
      Block Input Operations            0
      Block Output Operations           864


94
95          proc univariate data=CLINIC plot;
96          TITLE 'Stem and Leaf Plot & Box plot for DBP';
97          var DBP;
98          run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time           0.17 seconds
      user cpu time       0.10 seconds
      system cpu time     0.00 seconds
      memory              3364.31k
      OS Memory           48220.00k
      Timestamp           09/23/2019 03:10:12 AM
```

```
      Step Count                        327  Switch Count  1
      Page Faults                       0
      Page Reclaims                     495
      Page Swaps                        0
      Voluntary Context Switches        281
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           456


99
100       /* problem 2 procs */
101       PROC SGPLOT DATA = CLINIC;
102       TITLE 'problem 2 bar chart for gender';
103       VBAR GENDER;
104       RUN;

NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           0.09 seconds
      user cpu time       0.04 seconds
      system cpu time     0.01 seconds
      memory              2207.10k
      OS Memory           48304.00k
      Timestamp           09/23/2019 03:10:12 AM
      Step Count                        328  Switch Count  3
      Page Faults                       0
      Page Reclaims                     495
      Page Swaps                        0
      Voluntary Context Switches        204
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           408

NOTE: There were 10 observations read from the data set WORK.CLINIC.

105
106       PROC GCHART DATA= CLINIC;
107       TITLE 'problem 2 pie chart for gender';
108       PIE GENDER;
109       RUN;

110       QUIT;

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE GCHART used (Total process time):
      real time           0.15 seconds
      user cpu time       0.14 seconds
      system cpu time     0.01 seconds
      memory              6844.93k
      OS Memory           51480.00k
      Timestamp           09/23/2019 03:10:12 AM
      Step Count                        329  Switch Count  1
      Page Faults                       0
      Page Reclaims                     1099
      Page Swaps                        0
      Voluntary Context Switches        7
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           320


111
112       proc gchart data= CLINIC;
113       title "problem 2 exploded 3d pie chart for gender";
```

```
114        pie3d GENDER /EXPLODE='M';
115        Run;

116
117        /* problem 3 procs */
118

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE GCHART used (Total process time):
      real time           0.14 seconds
      user cpu time       0.13 seconds
      system cpu time     0.01 seconds
      memory              5821.15k
      OS Memory           51480.00k
      Timestamp           09/23/2019 03:10:12 AM
      Step Count                        330  Switch Count  1
      Page Faults                       0
      Page Reclaims                     734
      Page Swaps                        0
      Voluntary Context Switches        27
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           360


119        PROC GCHART DATA=CLINIC;
120        TITLE 'Problem 3 chart 1';
121        VBAR GENDER / GROUP=RACE DISCRETE;
122        RUN;

123

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE GCHART used (Total process time):
      real time           0.14 seconds
      user cpu time       0.14 seconds
      system cpu time     0.00 seconds
      memory              5955.90k
      OS Memory           51736.00k
      Timestamp           09/23/2019 03:10:12 AM
      Step Count                        331  Switch Count  1
      Page Faults                       0
      Page Reclaims                     853
      Page Swaps                        0
      Voluntary Context Switches        10
      Involuntary Context Switches      4
      Block Input Operations            0
      Block Output Operations           120


124        PROC GCHART DATA=CLINIC;
125        TITLE 'Problem 3 chart 2';
126        VBAR HR / GROUP=GENDER MIDPOINTS=50 to 100 by 10;
127        RUN;

128
129        /* Problem 4 procs */
130

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE GCHART used (Total process time):
      real time           0.14 seconds
      user cpu time       0.14 seconds
      system cpu time     0.01 seconds
```

```
      memory             5872.03k
      OS Memory          51992.00k
      Timestamp          09/23/2019 03:10:12 AM
      Step Count                       332  Switch Count  1
      Page Faults                      0
      Page Reclaims                    870
      Page Swaps                       0
      Voluntary Context Switches       10
      Involuntary Context Switches     0
      Block Input Operations           0
      Block Output Operations          104


131        PROC PLOT DATA=CLINIC;
132        PLOT SBP*HR=RACE;
133        TITLE "Problem 4 (a)";
134        RUN;

135

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE PLOT used (Total process time):
      real time          0.01 seconds
      user cpu time      0.02 seconds
      system cpu time    0.00 seconds
      memory             813.90k
      OS Memory          48808.00k
      Timestamp          09/23/2019 03:10:12 AM
      Step Count                       333  Switch Count  1
      Page Faults                      0
      Page Reclaims                    51
      Page Swaps                       0
      Voluntary Context Switches       10
      Involuntary Context Switches     0
      Block Input Operations           0
      Block Output Operations          0


136        PROC PLOT DATA=CLINIC;
137        PLOT SBP*DBP=GENDER;
138        TITLE "Problem 4 (b)";
139        RUN;

140

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE PLOT used (Total process time):
      real time          0.01 seconds
      user cpu time      0.02 seconds
      system cpu time    0.00 seconds
      memory             743.43k
      OS Memory          48808.00k
      Timestamp          09/23/2019 03:10:12 AM
      Step Count                       334  Switch Count  1
      Page Faults                      0
      Page Reclaims                    51
      Page Swaps                       0
      Voluntary Context Switches       11
      Involuntary Context Switches     0
      Block Input Operations           0
      Block Output Operations          24


141        PROC SORT DATA=CLINIC;
```

```
142          BY RACE;
143       RUN;

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: The data set WORK.CLINIC has 10 observations and 7 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.00 seconds
      user cpu time       0.00 seconds
      system cpu time     0.00 seconds
      memory              1052.00k
      OS Memory           49068.00k
      Timestamp           09/23/2019 03:10:12 AM
      Step Count                        335  Switch Count  2
      Page Faults                       0
      Page Reclaims                     114
      Page Swaps                        0
      Voluntary Context Switches        16
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           272


144
145       PROC GPLOT DATA=CLINIC;
146          TITLE "Problem 4 (c)";
147          BY RACE;
148          PLOT SBP * HR = GENDER;
149       RUN;

NOTE: 2 observation(s) contained a MISSING value for the SBP * HR = GENDER request.
NOTE: The above message was for the following BY group:
      RACE=B
NOTE: 2 observation(s) contained a MISSING value for the SBP * HR = GENDER request.
NOTE: The above message was for the following BY group:
      RACE=B
150
151       /* Problem 5 procs */

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE GPLOT used (Total process time):
      real time           0.23 seconds
      user cpu time       0.22 seconds
      system cpu time     0.02 seconds
      memory              6969.93k
      OS Memory           53528.00k
      Timestamp           09/23/2019 03:10:13 AM
      Step Count                        336  Switch Count  1
      Page Faults                       0
      Page Reclaims                     1676
      Page Swaps                        0
      Voluntary Context Switches        11
      Involuntary Context Switches      14
      Block Input Operations            0
      Block Output Operations           320


152       PROC GCHART DATA=CLINIC;
153       TITLE 'problem 5 chart';
154       VBAR GENDER / SUBGROUP=RACE
155              SUMVAR=N_PROC
156              TYPE = SUM
157              DISCRETE;
158       RUN;
```

```
159        QUIT;

NOTE: There were 10 observations read from the data set WORK.CLINIC.
NOTE: PROCEDURE GCHART used (Total process time):
      real time           0.14 seconds
      user cpu time       0.14 seconds
      system cpu time     0.01 seconds
      memory              6215.34k
      OS Memory           51992.00k
      Timestamp           09/23/2019 03:10:13 AM
      Step Count                        337  Switch Count  1
      Page Faults                       0
      Page Reclaims                     779
      Page Swaps                        0
      Voluntary Context Switches        12
      Involuntary Context Switches      3
      Block Input Operations            0
      Block Output Operations           112


160
161        OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
172
```

Results: Assignment4.sas

Stem and Leaf Plot & Box plot for SBP

The UNIVARIATE Procedure
Variable: SBP

Moments			
N	9	**Sum Weights**	9
Mean	136.444444	**Sum Observations**	1228
Std Deviation	34.8105986	**Variance**	1211.77778
Skewness	0.83063748	**Kurtosis**	-1.1927731
Uncorrected SS	177248	**Corrected SS**	9694.22222
Coeff Variation	25.5126537	**Std Error Mean**	11.6035329

Basic Statistical Measures			
Location		**Variability**	
Mean	136.4444	**Std Deviation**	34.81060
Median	122.0000	**Variance**	1212
Mode	.	**Range**	86.00000
		Interquartile Range	54.00000

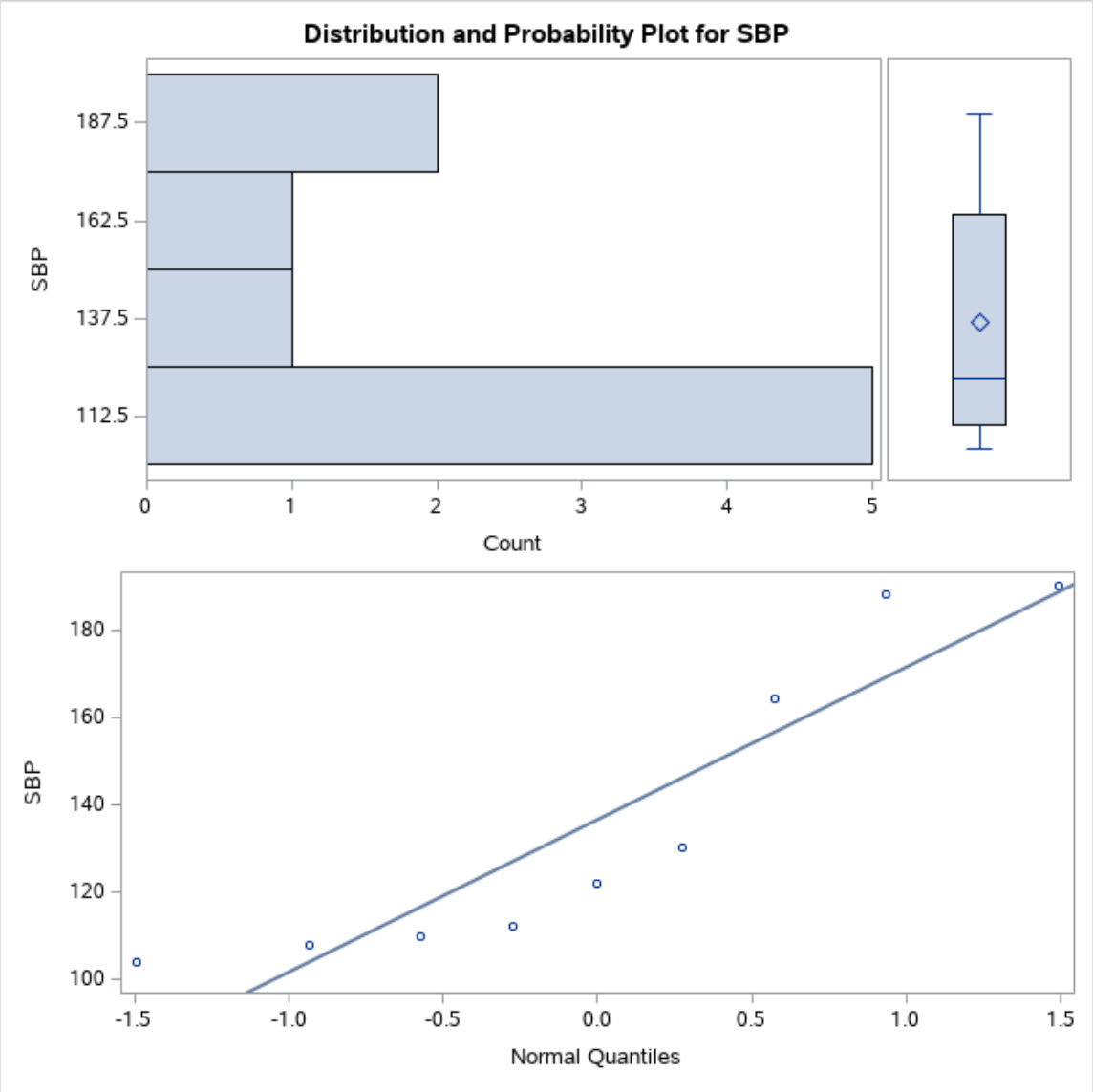
Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	11.75887	**Pr > |t|**	<.0001
Sign	**M**	4.5	**Pr >= |M|**	0.0039
Signed Rank	**S**	22.5	**Pr >= |S|**	0.0039

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	190
99%	190
95%	190
90%	190
75% Q3	164
50% Median	122
25% Q1	110

Quantiles (Definition 5)	
Level	Quantile
10%	104
5%	104
1%	104
0% Min	104

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
104	7	122	5
108	4	130	1
110	2	164	10
112	8	188	3
122	5	190	9

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	1	10.00	100.00



Stem and Leaf Plot & Box plot for DBP

The UNIVARIATE Procedure
Variable: DBP

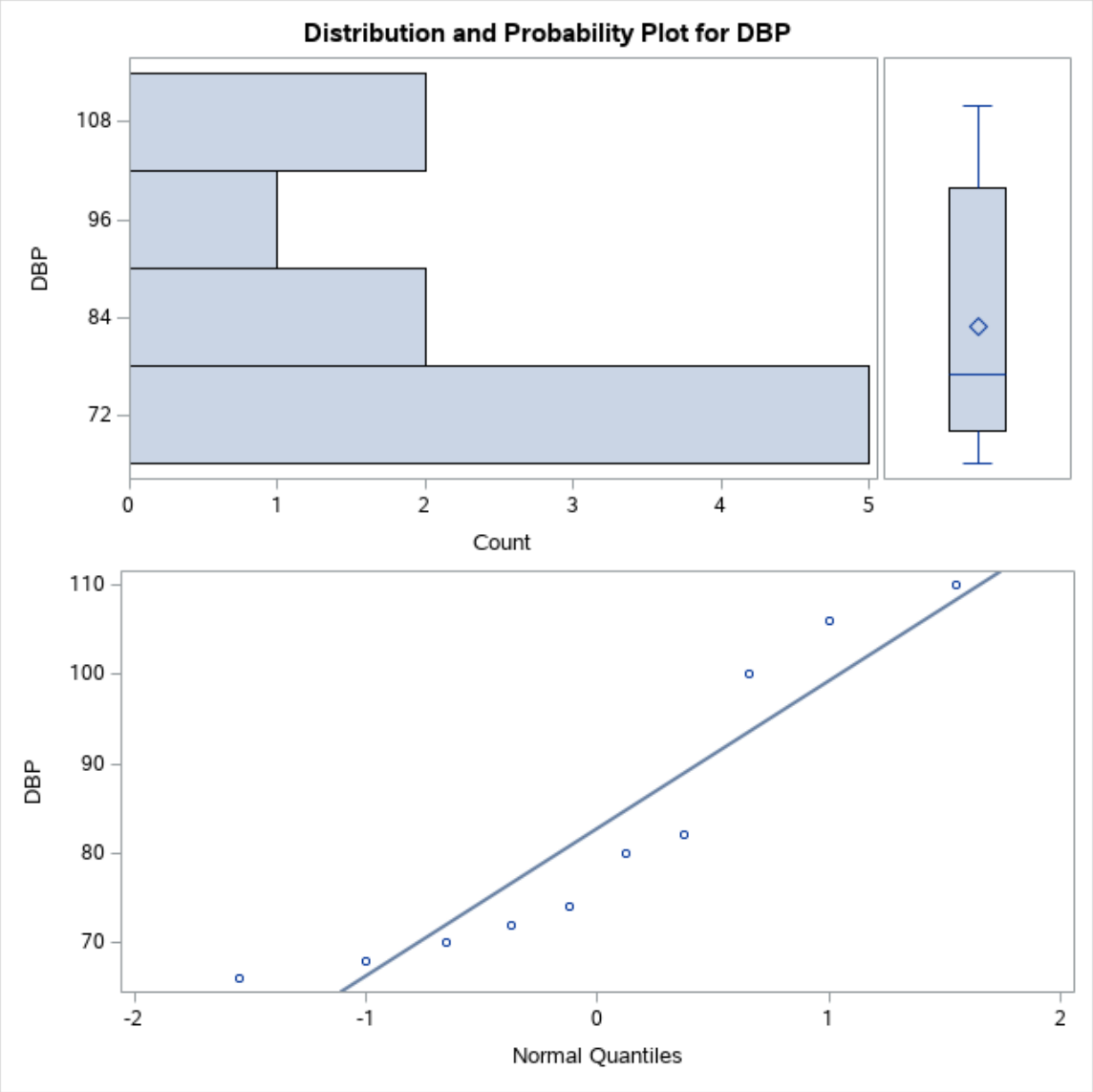
Moments			
N	10	**Sum Weights**	10
Mean	82.8	**Sum Observations**	828
Std Deviation	16.4708497	**Variance**	271.288889
Skewness	0.7974293	**Kurtosis**	-1.0809943
Uncorrected SS	71000	**Corrected SS**	2441.6
Coeff Variation	19.8923305	**Std Error Mean**	5.20854

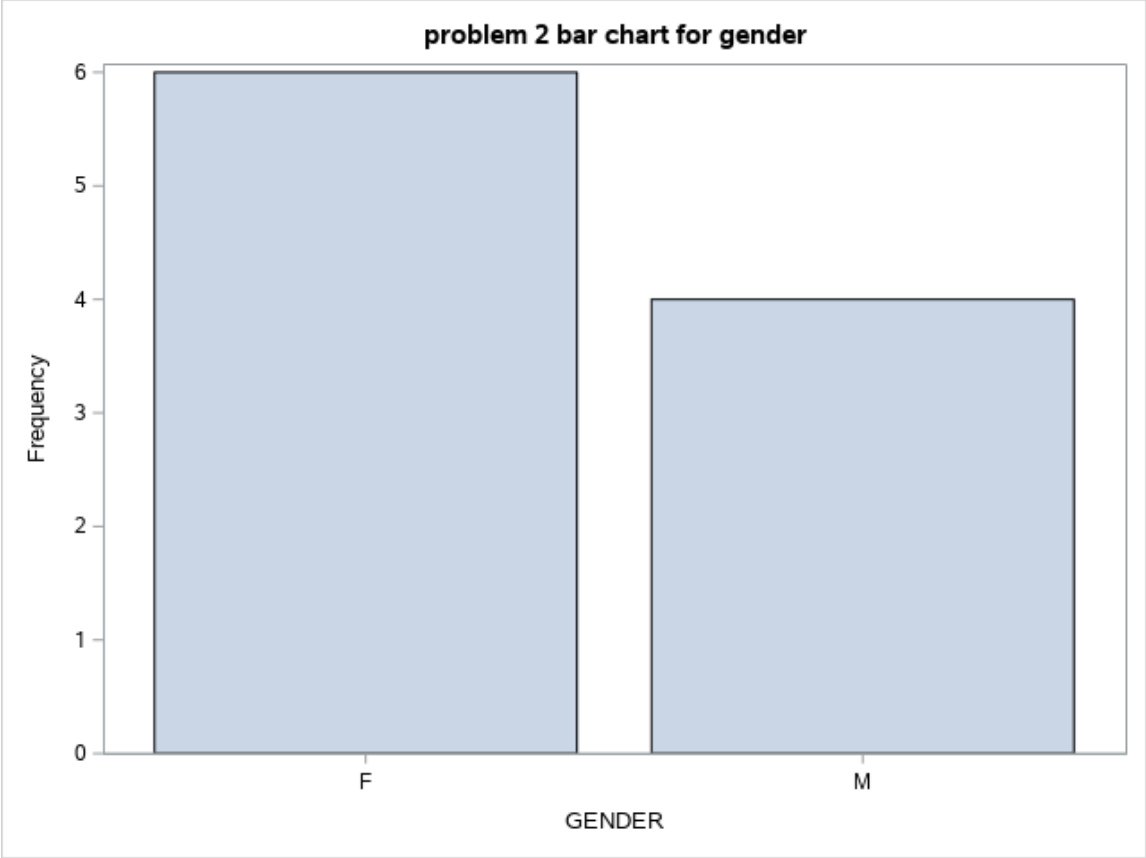
Basic Statistical Measures			
Location		**Variability**	
Mean	82.80000	**Std Deviation**	16.47085
Median	77.00000	**Variance**	271.28889
Mode	.	**Range**	44.00000
		Interquartile Range	30.00000

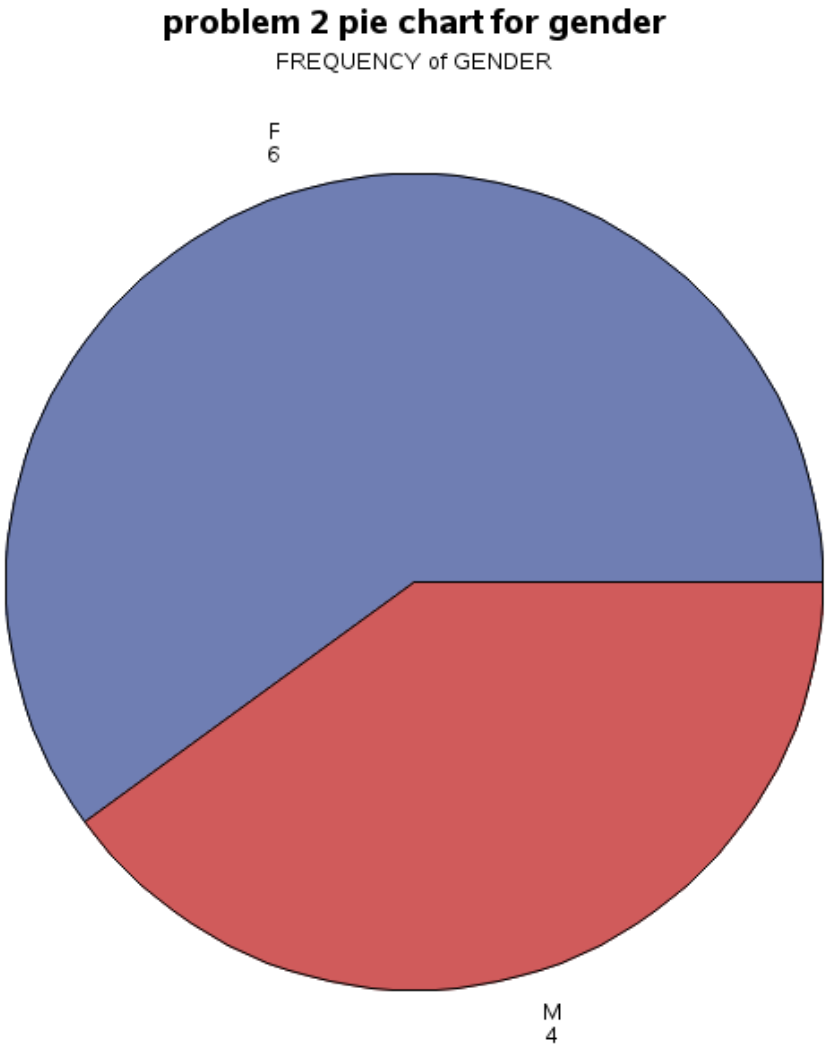
Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	15.89697	**Pr > |t|**	<.0001
Sign	**M**	5	**Pr >= |M|**	0.0020
Signed Rank	**S**	27.5	**Pr >= |S|**	0.0020

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	110
99%	110
95%	110
90%	108
75% Q3	100
50% Median	77
25% Q1	70
10%	67
5%	66
1%	66
0% Min	66

Extreme Observations			
Lowest		**Highest**	
Value	**Obs**	**Value**	**Obs**
66	7	80	1
68	4	82	5
70	8	100	3
72	2	106	10
74	6	110	9

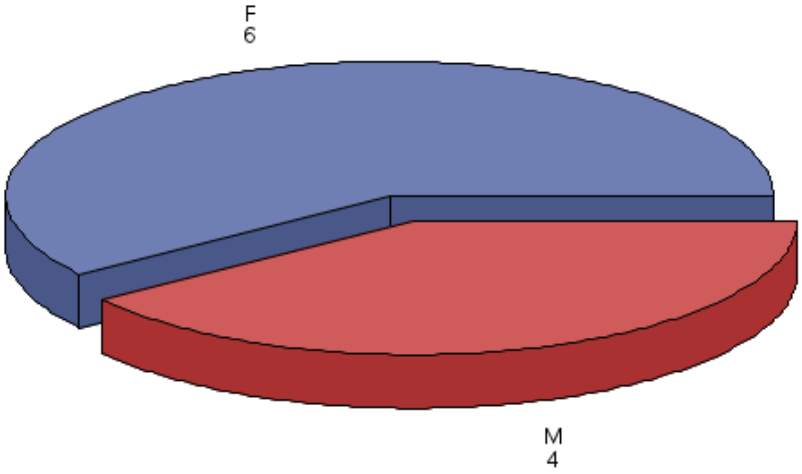

Distribution and Probability Plot for DBP
DBP
108
96
84
72
0
1
2
3
4
5
Count
DBP
110
100
90
80
70
-2
-1
0
1
2
Normal Quantiles


problem 2 bar chart for gender
Frequency
0
1
2
3
4
5
6
F
M
GENDER

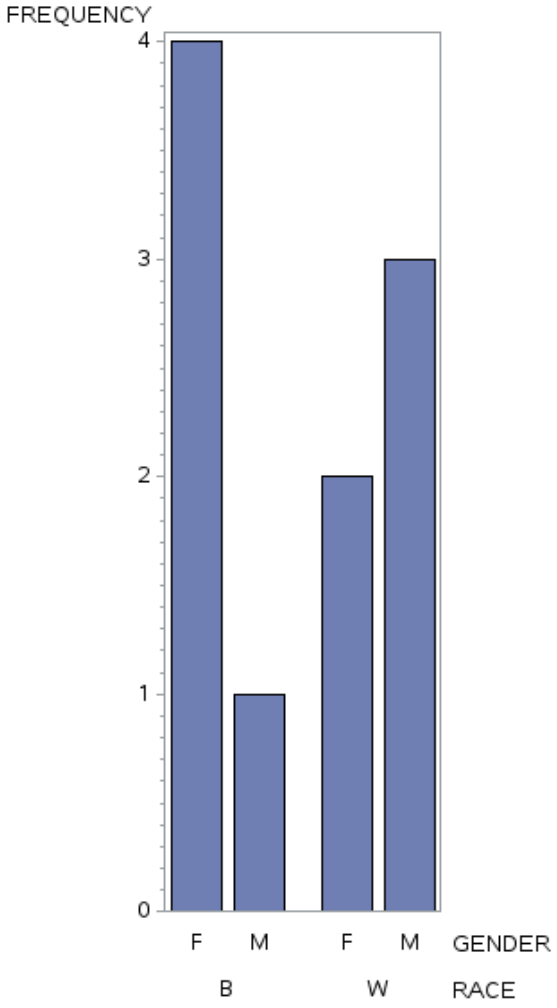

problem 2 pie chart for gender
FREQUENCY of GENDER
F
6
M
4

problem 2 exploded 3d pie chart for gender

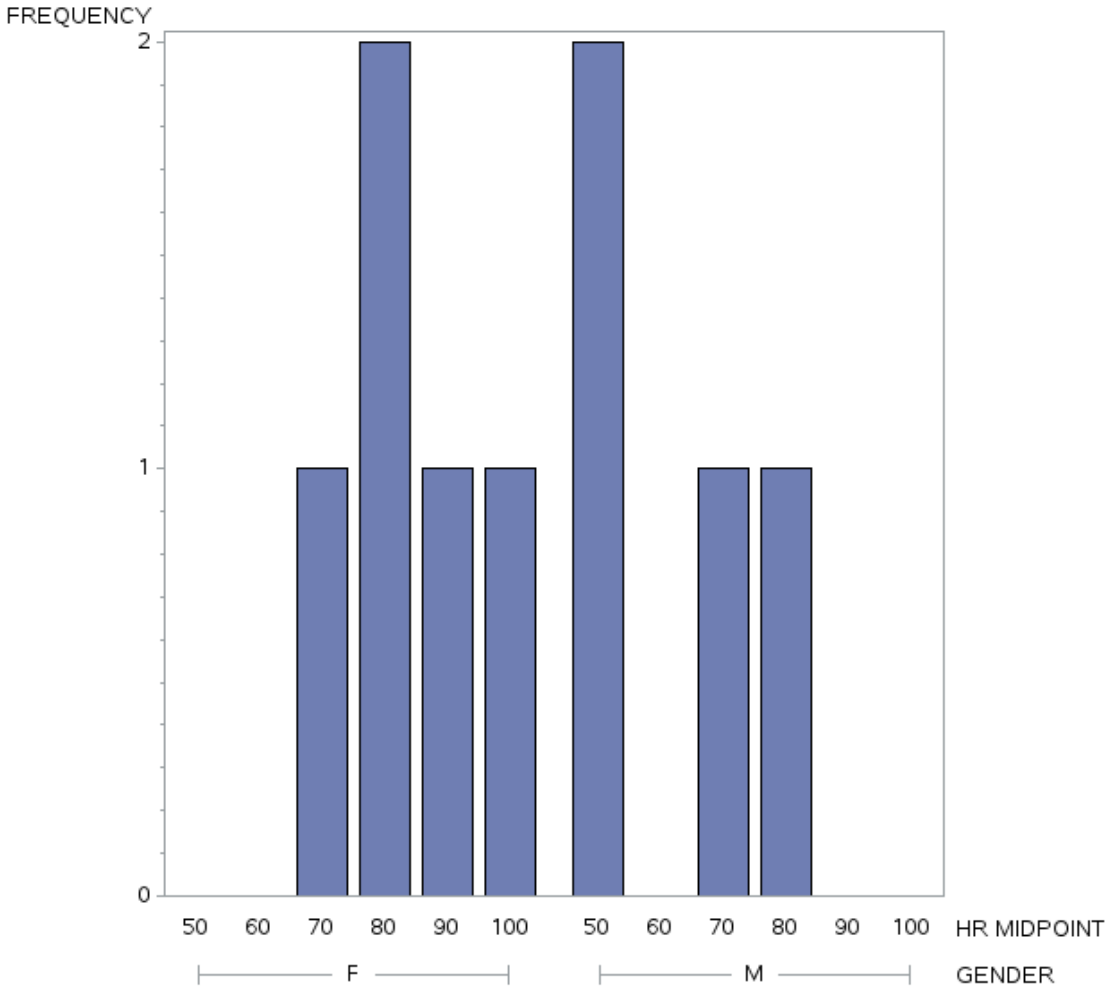
FREQUENCY of GENDER



Problem 3 chart 1



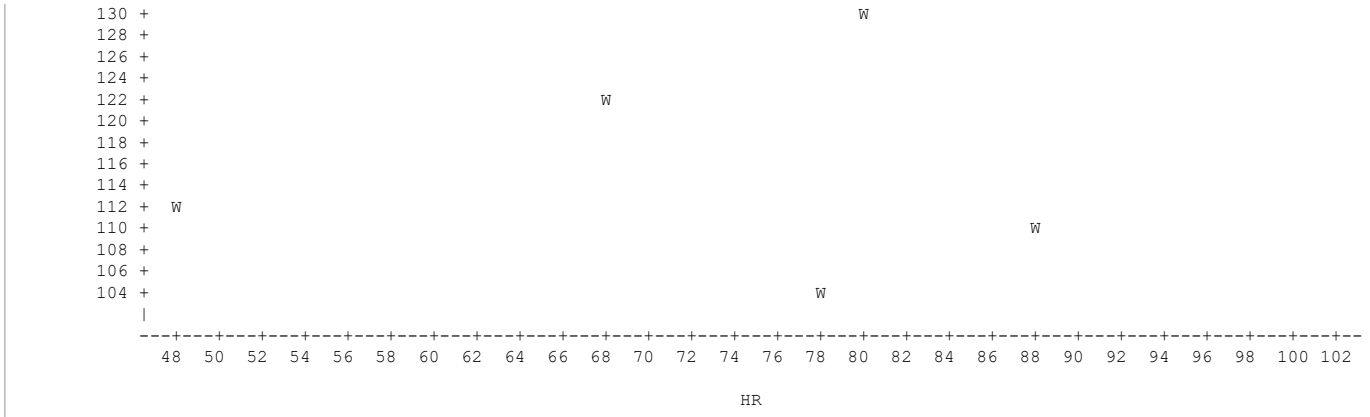
Problem 3 chart 2



Problem 4 (a)

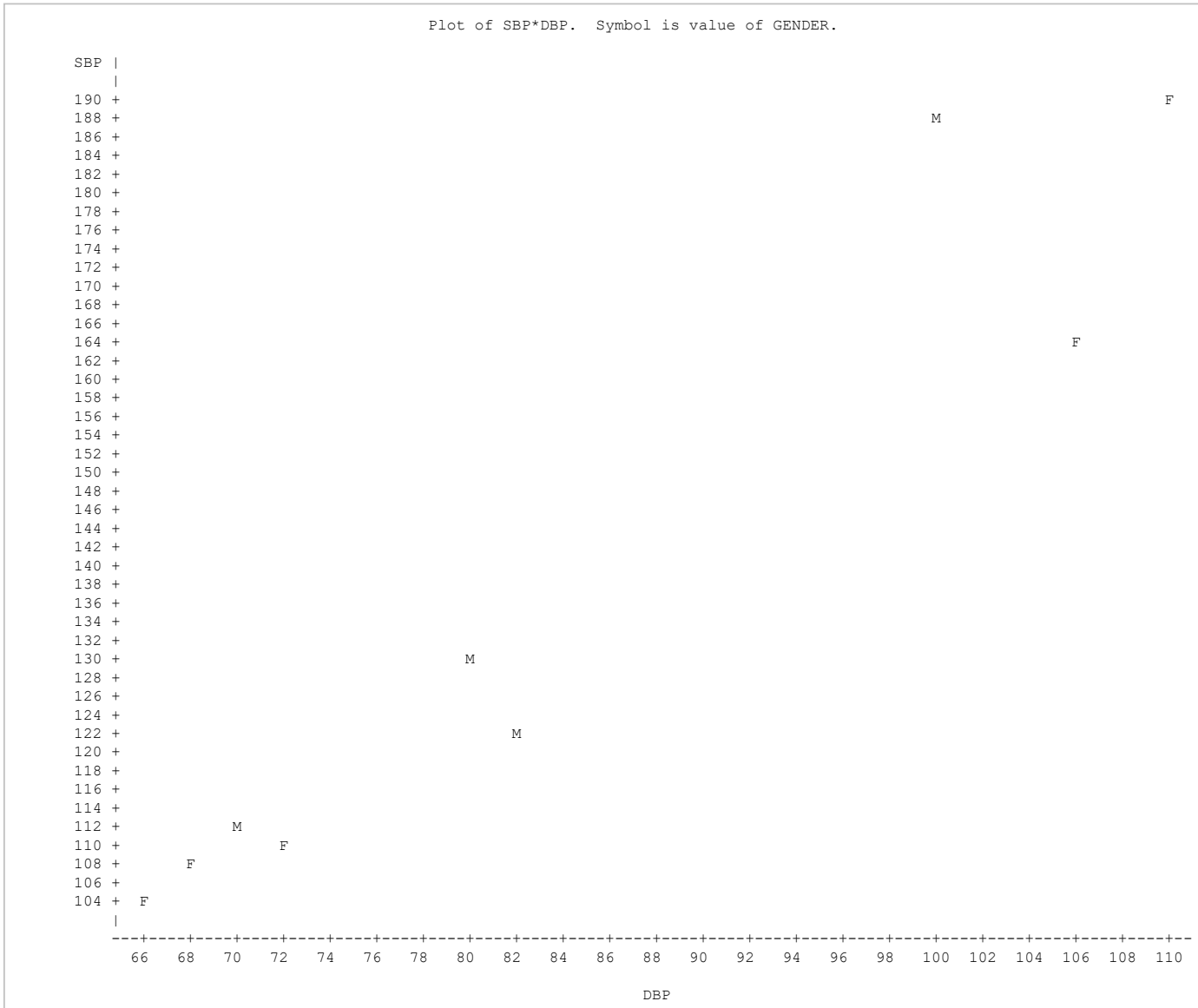
Plot of SBP*HR. Symbol is value of RACE.

```
SBP |
    |
190 +                                                  B
188 +      B
186 +
184 +
182 +
180 +
178 +
176 +
174 +
172 +
170 +
168 +
166 +
164 +                              B
162 +
160 +
158 +
156 +
154 +
152 +
150 +
148 +
146 +
144 +
142 +
140 +
138 +
136 +
134 +
132 +
```



NOTE: 2 obs had missing values.

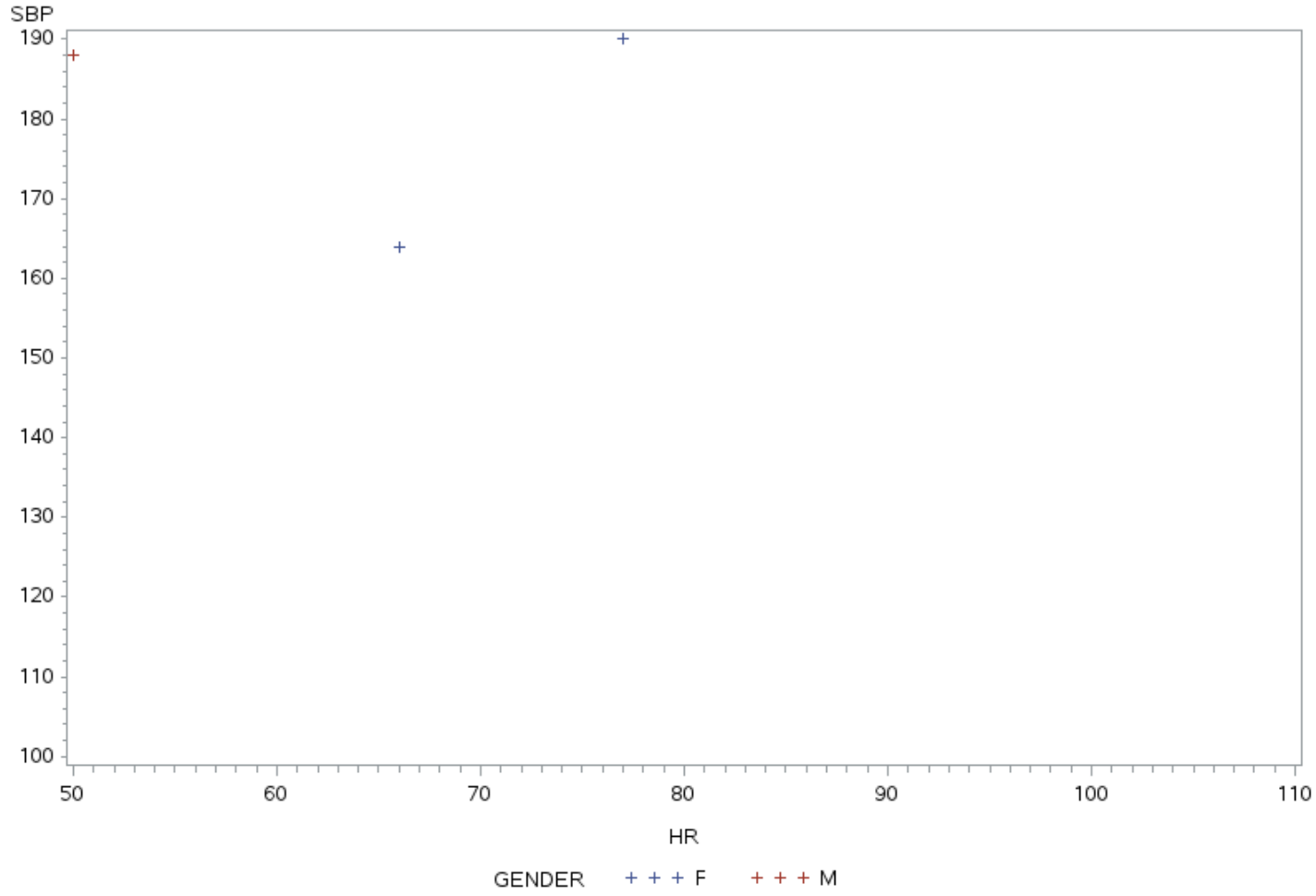
Problem 4 (b)



NOTE: 1 obs had missing values.

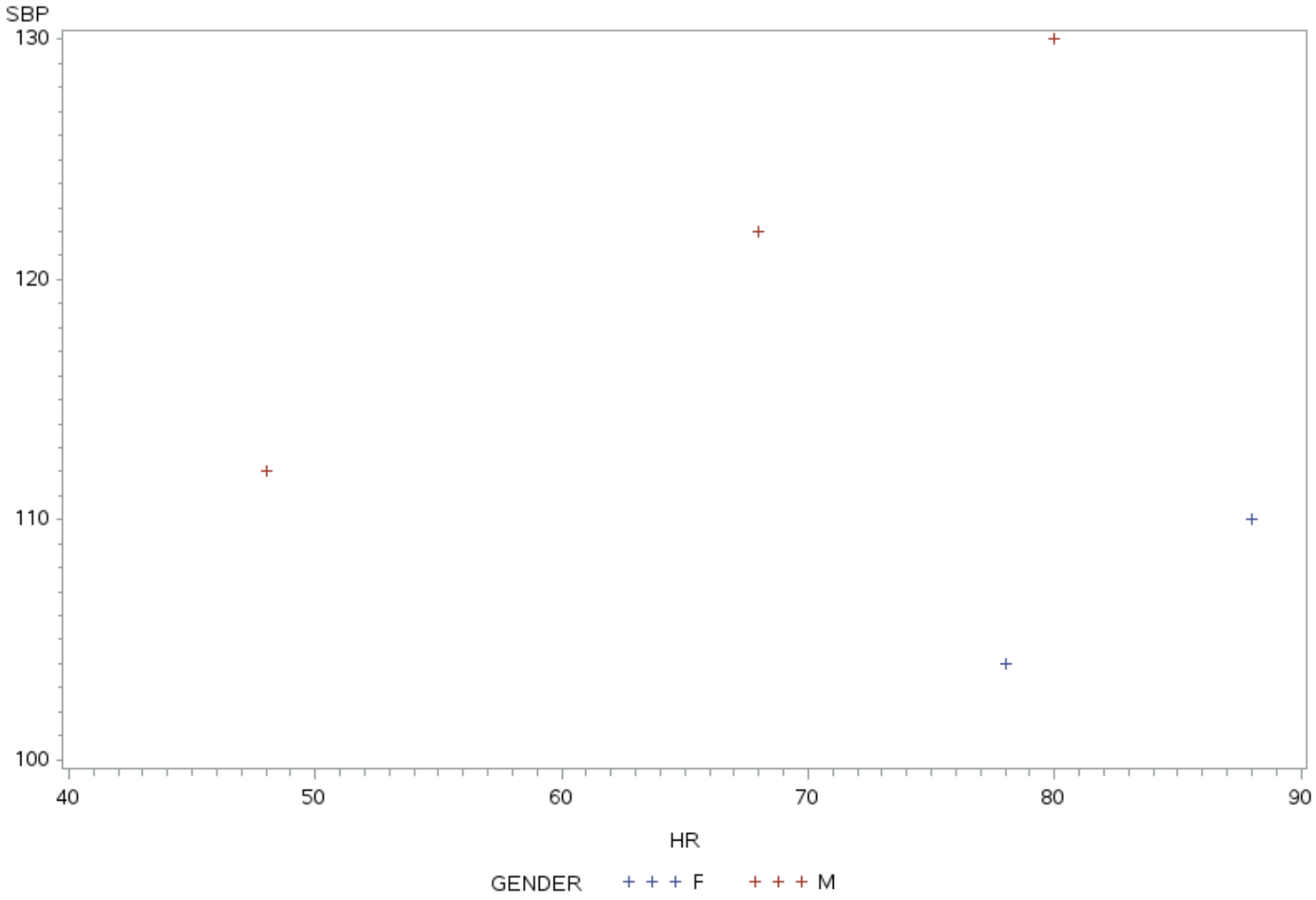
Problem 4 (c)

RACE=B



Problem 4 (c)

RACE=W



problem 5 chart