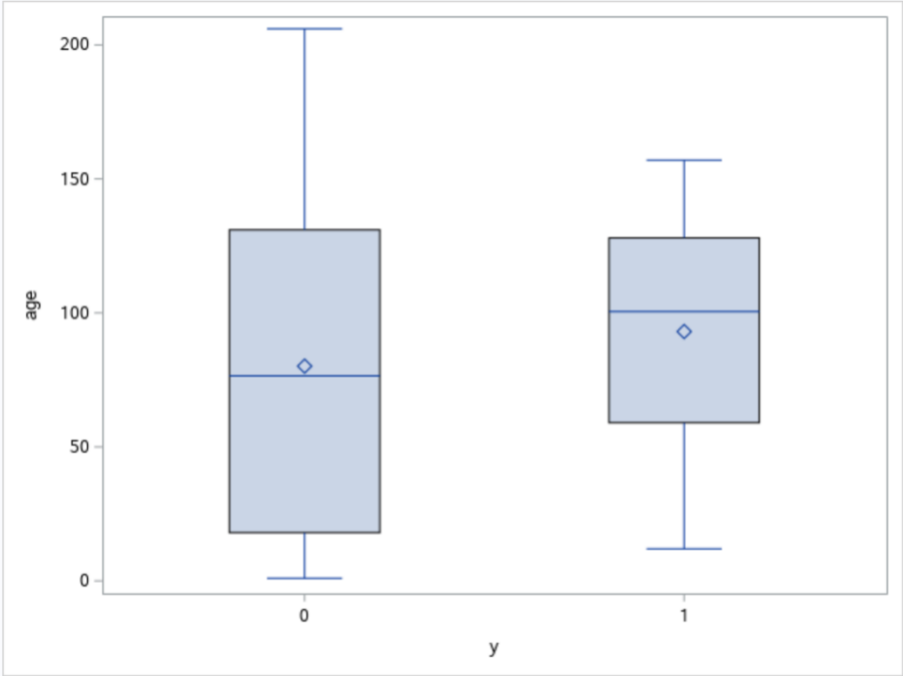
Question 4.7

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.5727	0.6024	-1.7534	0.6080	0.90	0.3418
age	1	0.0043	0.0058	-0.0072	0.0158	0.54	0.4627
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

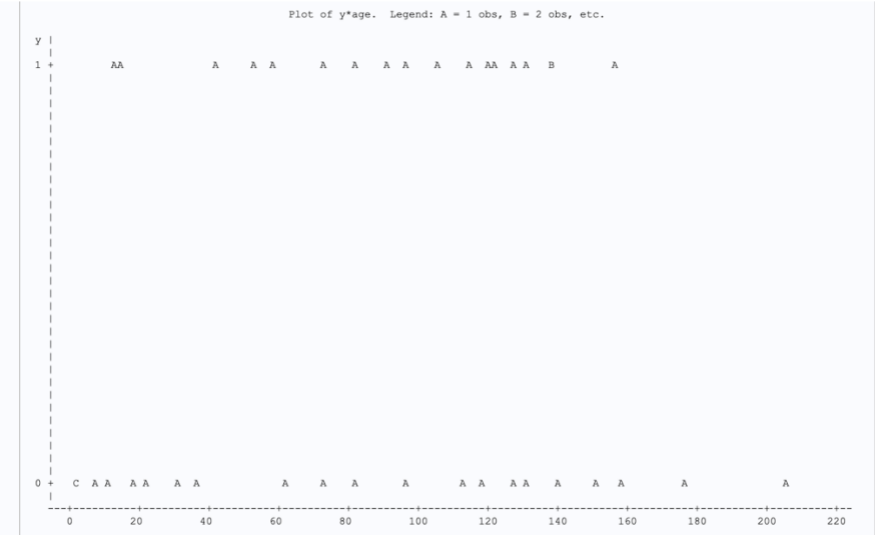
LR Statistics For Type 3 Analysis			
Source	DF	Chi-Square	Pr > ChiSq
age	1	0.55	0.4596



Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-2.0463	0.9944	-3.9952	-0.0973	4.23	0.0396
age	1	0.0600	0.0268	0.0075	0.1125	5.03	0.0250
age2	1	-0.0003	0.0002	-0.0006	-0.0000	4.40	0.0360
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

LR Statistics For Type 3 Analysis			
Source	DF	Chi-Square	Pr > ChiSq
age	1	6.82	0.0090
age2	1	6.28	0.0122



Code:

```
data kyp;
input age y;
age2=age*age;
datalines;
…
;

proc genmod descending data = kyp;
model y = age / dist=binomial link=logit type3;
run;

proc sgplot data=kyp;
vbox age/ category=y;
run;

proc genmod descending data = kyp;
model y = age age2 / dist=binomial link=logit type3;
run;

proc plot;
plot y*age;
run;
```

Question 4.100

4.100

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.2155	0.1165	-1.4438	-0.9872	108.93	<.0001
number	1	0.4672	0.0421	0.3847	0.5498	123.07	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

LR Statistics For Type 3 Analysis			
Source	DF	Chi-Square	Pr > ChiSq
number	1	132.53	<.0001

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter		DF	Estimate	Standard Error	Wald 95% Confidence Limits	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.1650	0.3991	-2.9471 -1.3828	29.43	<.0001
number	1	1	1.3125	0.4303	0.4691 2.1559	9.30	0.0023
number	2	1	2.0117	0.4038	1.2203 2.8031	24.82	<.0001
number	3	1	2.2622	0.4046	1.4692 3.0551	31.27	<.0001
number	4	1	2.8082	0.4113	2.0021 3.6143	46.62	<.0001
number	5	1	3.3176	0.5186	2.3013 4.3340	40.93	<.0001
Scale		0	1.0000	0.0000	1.0000 1.0000		

Note: The scale parameter was held fixed.

LR Statistics For Type 3 Analysis			
Source	DF	Chi-Square	Pr > ChiSq
number	5	146.30	<.0001

Code:

```
data cc;
input number lung control;
total = lung+control;
datalines;
0 7 61
1 55 129
2 489 570
3 475 431
4 293 154
5 38 12
;
proc genmod data =cc;
model lung/total = number / dist=bin link=logit type3;
run;

proc genmod data =cc;
class number/order = data param=ref ref=first;
model lung/total = number / dist=bin link=logit type3;
run;
```