3.4 (a)

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	0.0026	0.0003	0.0020	0.0033	58.11	<.0001
alcohol	1	0.0007	0.0007	-0.0008	0.0021	0.81	0.3677
Scale	0	1.0000	0.0000	1.0000	1.0000		

3.4 (b)

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	0.0026	0.0004	0.0019	0.0033	52.33	<.0001
alcohol	1	0.0005	0.0005	-0.0004	0.0014	1.16	0.2822
Scale	0	1.0000	0.0000	1.0000	1.0000		

3.4 (c)

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-5.9605	0.1154	-6.1867	-5.7342	2666.41	<.0001
alcohol	1	0.3166	0.1254	0.0707	0.5624	6.37	0.0116
Scale	0	1.0000	0.0000	1.0000	1.0000		

3.5 (a)

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	0.0176	0.0035	0.0108	0.0244	25.52	<.0001
snoring	1	0.0181	0.0026	0.0130	0.0232	48.82	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

3.5 (b)

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	0.0176	0.0035	0.0108	0.0244	25.52	<.0001
snoring	1	0.0362	0.0052	0.0261	0.0464	48.82	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

3.5 (c)

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.0186	0.0073	-0.0329	-0.0044	6.57	0.0104
snoring	1	0.0362	0.0052	0.0261	0.0464	48.82	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

SAS codes:

3.4 (a)

```
data table1;
input alcohol present count;
datalines;
0 48 17114
0.5 38 14502
1.5 5 793
4.0 1 127
7.0 0 37
;

proc genmod;
model present/count = alcohol / dist=binomial link = identity;
run;
```

3.4 (b)

```
data table2;
input alcohol present count;
datalines;
0 48 17114
1 38 14502
2 5 793
3 1 127
4 1 38
;

proc genmod;
model present/count = alcohol / dist=binomial link = identity;
run;
```

3.4 (c)

```
data table3;
input alcohol present count;
datalines;
0 48 17114
0.5 38 14502
1.5 5 793
4.0 1 127
7.0 1 38
;

proc genmod;
model present/count = alcohol / dist=binomial link=logit;
run;
```

3.5 (a)

```
data table4;
input snoring yes total;
datalines;
0 24 1379
2 35 638
4 21 213
6 30 254
;

proc genmod;
model yes/total=snoring / dist=binomial link=identity;
run;
```

3.5(b)

```
data table5;
input snoring yes total;
datalines;
0 24 1379
1 35 638
2 21 213
3 30 254
;

proc genmod;
model yes/total=snoring / dist=binomial link=identity;
run;
```

3.5©

```
data table6;
input snoring yes total;
datalines;
1 24 1379
2 35 638
3 21 213
4 30 254
;

proc genmod;
model yes/total=snoring / dist=binomial link=identity;
run;
```