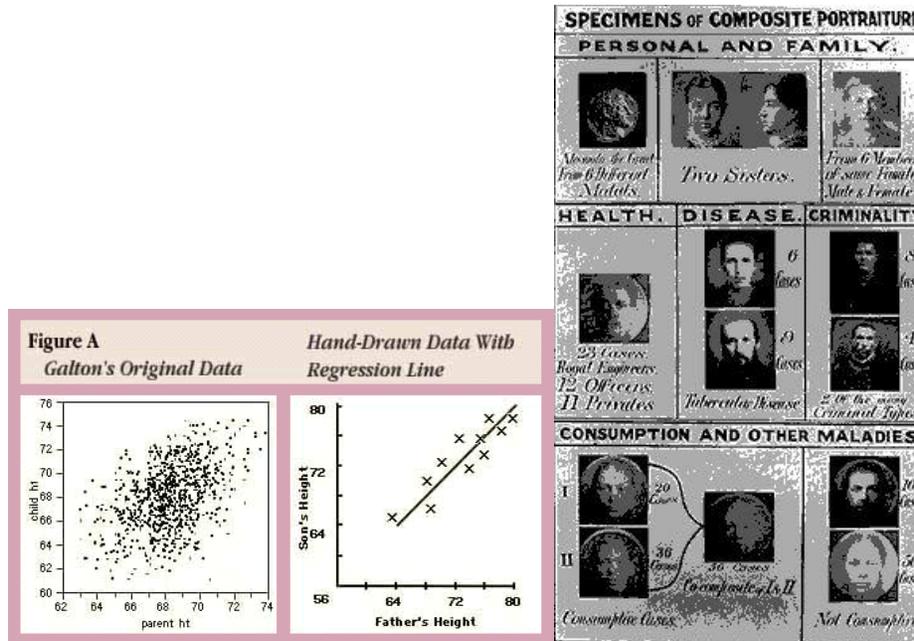


FACULDADE DE SAÚDE PÚBLICA - USP
DEPARTAMENTO DE EPIDEMIOLOGIA

MODELOS DE REGRESSÃO APLICADOS À EPIDEMIOLOGIA



APOSTILA 2:

ANEXOS

Profa. Dra. MARIA DO ROSARIO DIAS DE OLIVEIRA LATORRE

Professora Titular do Departamento de Epidemiologia

Prof. Convidado : BRUNO CÉSAR SPINELI SILVA

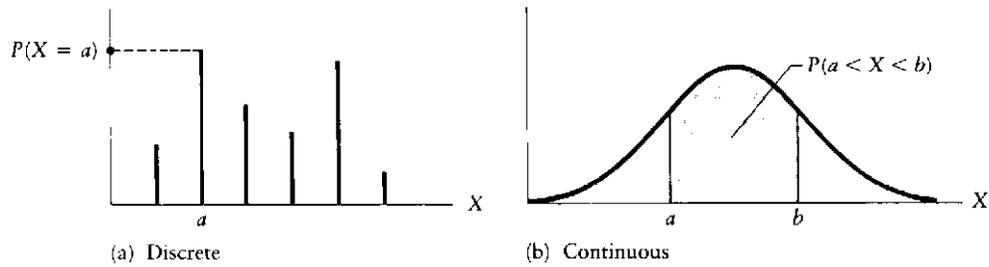
Monitor: MATHEUS ABREU

2026

ANEXO 1

Distribuições de Probabilidades e Tábuas estatísticas

DISTRIBUIÇÕES DE PROBABILIDADES



Exemplo de distribuição de probabilidades discreta: distribuição binomial

DISTRIBUIÇÕES DE PROBABILIDADES CONTÍNUAS

DISTRIBUIÇÃO NORMAL

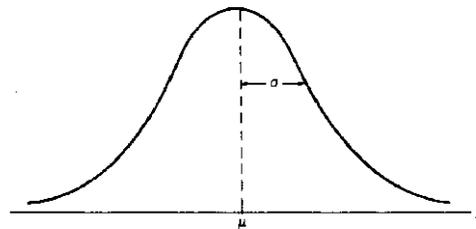
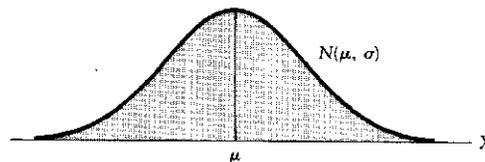


FIGURE 6.1 The normal curve.

FIGURE 3-2 The normal distribution



Definição: a v.a. X tem distribuição normal se sua função distribuição de probabilidades for:

$$f(X) = \frac{1}{\sigma\sqrt{2\pi}} \cdot e^{-\frac{1}{2}\left(\frac{X-\bar{X}}{\sigma}\right)^2} \quad \text{e} \quad P(X \leq X_p) = \frac{1}{\sigma\sqrt{2\pi}} \int_{-\infty}^{X_p} e^{-\frac{1}{2}\left(\frac{X-\bar{X}}{\sigma}\right)^2} dx$$

$$\left\{ \begin{array}{l} -\infty < X < +\infty \\ \bar{X} \text{ e } \sigma > 0 \\ e = 2,718 \quad \text{e} \quad \pi = 3,1416 \end{array} \right.$$

Notação: $X \sim N(\bar{X}; \sigma_X)$

Propriedades:

- as probabilidades da v.a. podem ser definidas a partir da curva;
- a área total é 100%, portanto pode-se trabalhar também com percentis.

$$\left\{ \begin{array}{l} \bar{X} \pm \sigma = 68,2\% \\ \bar{X} \pm 1,96 \sigma = \bar{X} \pm 2 \sigma = 95,4\% \\ \bar{X} \pm 2,58 \sigma = \bar{X} \pm 3 \sigma = 99,6\% \end{array} \right.$$

- é simétrica em relação à média

Normal reduzida:

$$Z \sim N(0;1) \quad \text{onde } Z = \frac{X - \bar{X}}{\sigma}$$

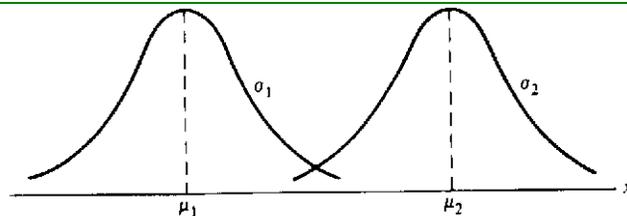
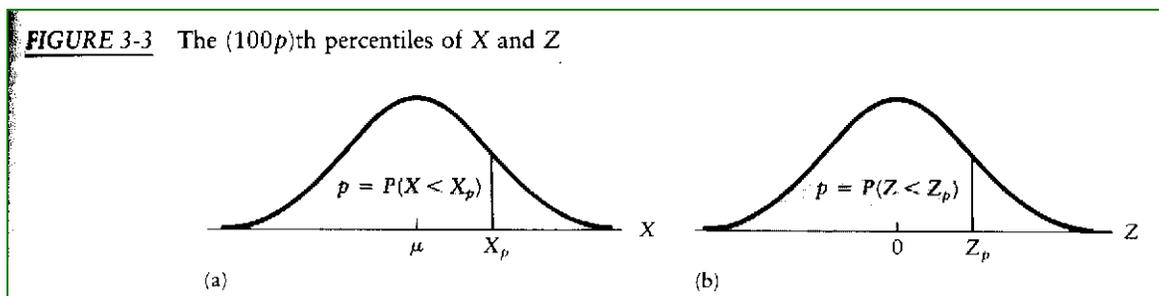
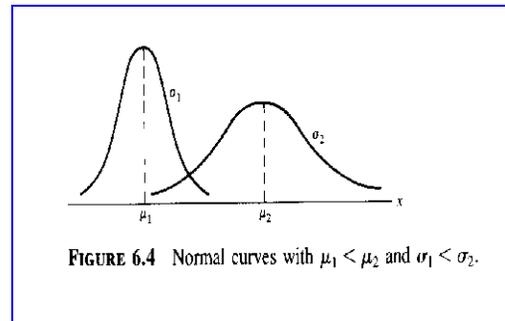
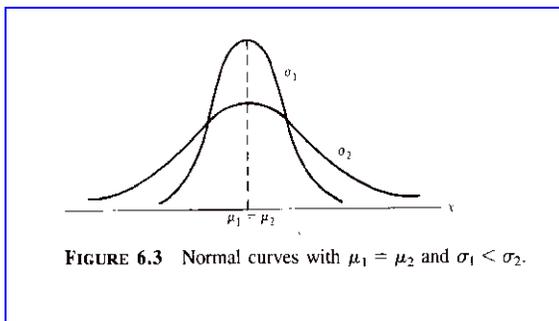


FIGURE 6.2 Normal curves with $\mu_1 < \mu_2$ and $\sigma_1 = \sigma_2$.



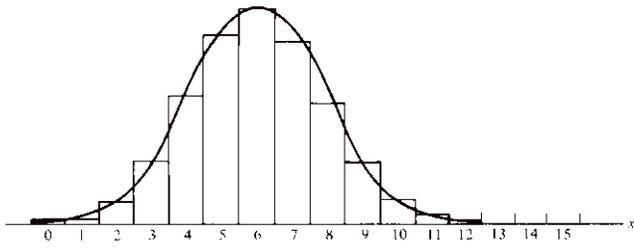
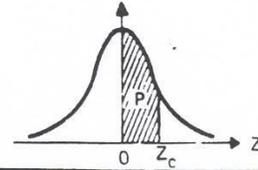


FIGURE 6.21 Normal approximation of $b(x; 15, 0.4)$.

TÁBUA I

DISTRIBUIÇÃO NORMAL REDUZIDA: $N(0; 1)$
 PROBABILIDADES p TAIS QUE $p = P(0 < Z < Z_c)$



parte inteira e primeira decimal de Z_c	SEGUNDA DECIMAL DE Z_c										parte inteira e primeira decimal de Z_c
	0	1	2	3	4	5	6	7	8	9	
	$p = 0$										
0.0	00000	00399	00798	01197	01595	01994	02392	02790	03188	03586	0.0
0.1	03983	04380	04776	05172	05567	05962	06356	06749	07142	07535	0.1
0.2	07926	08317	08706	09095	09483	09871	10257	10642	11026	11409	0.2
0.3	11791	12172	12552	12930	13307	13683	14058	14431	14803	15173	0.3
0.4	15542	15910	16276	16640	17003	17364	17724	18082	18439	18793	0.4
0.5	19146	19497	19847	20194	20540	20884	21226	21566	21904	22240	0.5
0.6	22575	22907	23237	23565	23891	24215	24537	24857	25175	25490	0.6
0.7	25804	26115	26424	26730	27035	27337	27637	27935	28230	28524	0.7
0.8	28814	29103	29389	29673	29955	30234	30511	30785	31057	31327	0.8
0.9	31594	31859	32121	32381	32639	32894	33147	33398	33646	33891	0.9
1.0	34134	34375	34614	34850	35083	35314	35543	35769	35993	36214	1.0
1.1	36433	36650	36864	37076	37286	37493	37698	37900	38100	38298	1.1
1.2	38493	38686	38877	39065	39251	39435	39617	39796	39973	40147	1.2
1.3	40320	40490	40658	40824	40988	41149	41309	41466	41621	41774	1.3
1.4	41924	42073	42220	42364	42507	42647	42786	42922	43056	43189	1.4
1.5	43319	43448	43574	43699	43822	43943	44062	44179	44295	44408	1.5
1.6	44520	44630	44738	44845	44950	45053	45154	45254	45352	45449	1.6
1.7	45543	45637	45728	45818	45907	45994	46080	46164	46246	46327	1.7
1.8	46407	46485	46562	46638	46712	46784	46856	46926	46995	47062	1.8
1.9	47128	47193	47257	47320	47381	47441	47500	47558	47615	47670	1.9
2.0	47725	47778	47831	47882	47932	47982	48030	48077	48124	48169	2.0
2.1	48214	48257	48300	48341	48382	48422	48461	48500	48537	48574	2.1
2.2	48610	48645	48679	48713	48745	48778	48809	48840	48870	48899	2.2
2.3	48928	48956	48983	49010	49036	49061	49086	49111	49134	49158	2.3
2.4	49180	49202	49224	49245	49266	49286	49305	49324	49343	49361	2.4
2.5	49379	49396	49413	49430	49446	49461	49477	49492	49506	49520	2.5
2.6	49534	49547	49560	49573	49585	49598	49609	49621	49632	49643	2.6
2.7	49653	49664	49674	49683	49693	49702	49711	49720	49728	49736	2.7
2.8	49744	49752	49760	49767	49774	49781	49788	49795	49801	49807	2.8
2.9	49813	49819	49825	49831	49836	49841	49846	49851	49856	49861	2.9
3.0	49865	49869	49874	49878	49882	49886	49889	49893	49897	49900	3.0
3.1	49903	49906	49910	49913	49916	49918	49921	49924	49926	49929	3.1
3.2	49931	49934	49936	49938	49940	49942	49944	49946	49948	49950	3.2
3.3	49952	49953	49955	49957	49958	49960	49961	49962	49964	49965	3.3
3.4	49966	49968	49969	49970	49971	49972	49973	49974	49975	49976	3.4
3.5	49977	49978	49978	49979	49980	49981	49981	49982	49983	49983	3.5
3.6	49984	49985	49985	49986	49986	49987	49987	49988	49988	49989	3.6
3.7	49989	49990	49990	49990	49991	49991	49992	49992	49992	49992	3.7
3.8	49993	49993	49993	49994	49994	49994	49994	49995	49995	49995	3.8
3.9	49995	49995	49996	49996	49996	49996	49996	49996	49997	49997	3.9
4.0	49997	49997	49997	49997	49997	49997	49998	49998	49998	49998	4.0
4.5	49999	50000	50000	50000	50000	50000	50000	50000	50000	50000	4.5
parte inteira e primeira decimal de Z_c	SEGUNDA E TERCEIRA DECIMAIS DE Z_c										parte inteira e primeira decimal de Z_c
	05	15	25	35	45	55	65	75	85	95	
	$p = 0$										
0.0	00199	00598	00997	01396	01795	02193	02591	02989	03387	03784	0.0
0.1	04181	04578	04974	05369	05764	06159	06553	06946	07339	07730	0.1
0.2	08121	08512	08901	09290	09677	10064	10450	10834	11218	11600	0.2
0.3	11982	12362	12741	13119	13495	13871	14244	14617	14988	15358	0.3
0.4	15726	16093	16458	16822	17184	17545	17903	18261	18500	18970	0.4
0.5	19322	19672	20021	20368	20712	21055	21396	21735	22073	22408	0.5
0.6	22741	23072	23401	23729	24054	24377	24697	25016	25333	25647	0.6
0.7	25959	26270	26577	26883	27186	27488	27786	28083	28377	28669	0.7
0.8	28959	29246	29531	29814	30094	30372	30648	30921	31192	31461	0.8
0.9	31727	31990	32252	32511	32767	33021	33273	33522	33769	34013	0.9
	05	15	25	35	45	55	65	75	85	95	

A DISTRIBUIÇÃO t DE STUDENT

A distribuição t de Student, a qual é simétrica em relação a 0, foi originalmente desenvolvida para descrever a variável aleatória:

$$T = \frac{\bar{X} - \mu}{S_{\bar{X}}} = \frac{\bar{X} - \mu}{S_X / \sqrt{n}}, \text{ onde } T \sim t_{n-1}, \text{ n - 1: graus de liberdade}$$

obs : quando $n \rightarrow \infty \Rightarrow T \sim N(0 ; 1)$

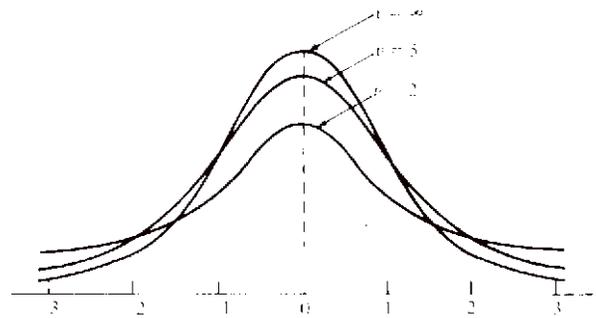


FIGURE 8.11 The t -distribution curves for $\nu = 2, 5,$ and ∞ .

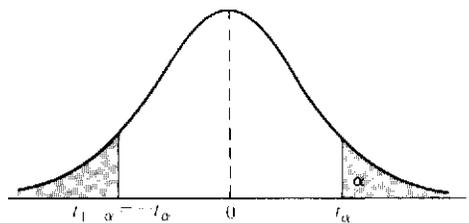
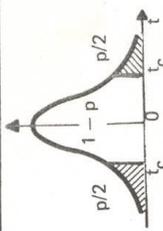


FIGURE 8.12 Symmetry property of the t -distribution.

TÁBUA III
DISTRIBUIÇÃO DE STUDENT: St (n)
VALORES CRÍTICOS DE t TAIS QUE $P(-t_c < t < t_c) = 1 - p$

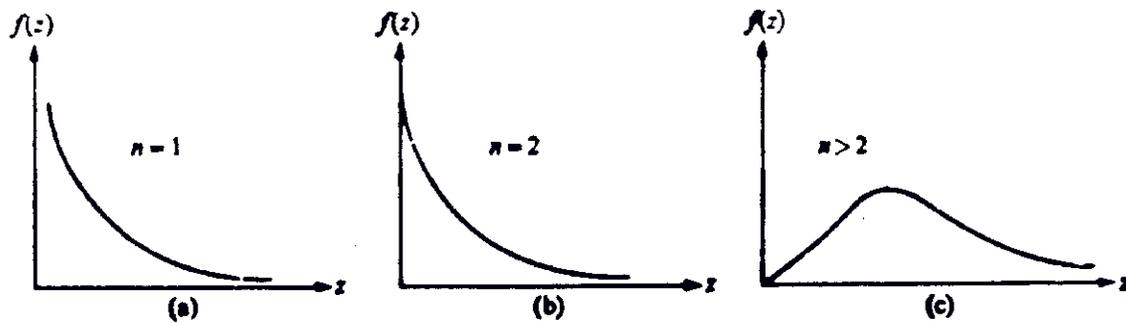


Graus de liberdade	90%	80%	70%	60%	50%	40%	30%	20%	10%	5%	4%	2%	1%	0,2%	0,1%
1	0,158	0,325	0,510	0,727	1,000	1,376	1,963	3,078	6,314	12,706	15,894	31,821	63,657	318,309	636,619
2	0,142	0,289	0,445	0,617	0,816	1,061	1,386	1,886	2,920	4,303	4,849	9,925	19,850	22,327	31,598
3	0,137	0,277	0,424	0,584	0,765	0,978	1,250	1,638	2,353	3,182	3,482	4,541	5,841	10,214	12,924
4	0,134	0,271	0,414	0,569	0,741	0,941	1,190	1,533	2,132	2,776	2,998	3,747	4,604	7,173	8,610
5	0,132	0,267	0,408	0,559	0,727	0,920	1,156	1,476	2,015	2,571	2,756	3,365	4,032	5,893	6,869
6	0,131	0,265	0,404	0,553	0,718	0,906	1,134	1,440	1,943	2,447	2,612	3,143	3,707	5,208	5,959
7	0,130	0,263	0,402	0,549	0,711	0,896	1,119	1,415	1,895	2,365	2,517	2,998	3,499	4,785	5,408
8	0,130	0,262	0,399	0,546	0,706	0,889	1,108	1,397	1,869	2,306	2,449	2,896	3,355	4,501	5,041
9	0,129	0,261	0,398	0,543	0,703	0,883	1,100	1,383	1,833	2,262	2,398	2,821	3,250	4,297	4,781
10	0,129	0,260	0,397	0,542	0,700	0,879	1,093	1,372	1,812	2,228	2,359	2,764	3,169	4,144	4,587
11	0,129	0,260	0,396	0,540	0,697	0,876	1,088	1,363	1,796	2,201	2,328	2,718	3,106	4,025	4,437
12	0,128	0,259	0,395	0,539	0,695	0,873	1,083	1,356	1,782	2,179	2,303	2,681	3,055	3,930	4,318
13	0,128	0,259	0,394	0,538	0,694	0,870	1,079	1,350	1,771	2,160	2,282	2,650	3,012	3,852	4,221
14	0,128	0,258	0,393	0,537	0,692	0,868	1,076	1,345	1,761	2,145	2,264	2,624	2,977	3,787	4,140
15	0,128	0,258	0,393	0,536	0,691	0,866	1,074	1,341	1,753	2,131	2,248	2,602	2,947	3,733	4,073
16	0,128	0,258	0,392	0,535	0,690	0,865	1,071	1,337	1,746	2,120	2,235	2,583	2,921	3,686	4,015
17	0,128	0,257	0,392	0,534	0,689	0,863	1,069	1,333	1,740	2,110	2,224	2,567	2,898	3,646	3,965
18	0,127	0,257	0,392	0,534	0,688	0,862	1,067	1,330	1,734	2,101	2,214	2,552	2,878	3,610	3,922
19	0,127	0,257	0,391	0,533	0,688	0,861	1,066	1,328	1,729	2,093	2,205	2,539	2,861	3,579	3,883
20	0,127	0,257	0,391	0,533	0,687	0,860	1,064	1,325	1,725	2,086	2,197	2,528	2,845	3,552	3,850
21	0,127	0,257	0,391	0,532	0,686	0,859	1,063	1,323	1,721	2,080	2,189	2,518	2,831	3,527	3,819
22	0,127	0,256	0,390	0,532	0,686	0,858	1,061	1,321	1,717	2,074	2,183	2,508	2,819	3,505	3,792
23	0,127	0,256	0,390	0,532	0,685	0,858	1,060	1,319	1,714	2,069	2,177	2,500	2,807	3,485	3,768
24	0,127	0,256	0,390	0,531	0,685	0,857	1,059	1,318	1,711	2,064	2,172	2,492	2,797	3,467	3,745
25	0,127	0,256	0,390	0,531	0,684	0,856	1,058	1,316	1,708	2,060	2,166	2,485	2,787	3,450	3,725
26	0,127	0,256	0,390	0,531	0,684	0,856	1,058	1,315	1,706	2,056	2,162	2,479	2,779	3,435	3,707
27	0,127	0,256	0,389	0,531	0,684	0,855	1,057	1,314	1,703	2,052	2,158	2,473	2,771	3,421	3,690
28	0,127	0,256	0,389	0,530	0,684	0,855	1,056	1,313	1,701	2,048	2,154	2,467	2,763	3,408	3,674
29	0,127	0,256	0,389	0,530	0,683	0,854	1,055	1,311	1,699	2,045	2,150	2,462	2,756	3,396	3,659
30	0,127	0,256	0,389	0,530	0,683	0,854	1,055	1,310	1,697	2,042	2,147	2,457	2,750	3,385	3,646
35	0,126	0,255	0,388	0,529	0,682	0,852	1,052	1,306	1,690	2,030	2,133	2,438	2,724	3,340	3,591
40	0,126	0,255	0,388	0,529	0,681	0,851	1,050	1,303	1,684	2,021	2,123	2,403	2,704	3,307	3,551
50	0,126	0,254	0,387	0,528	0,679	0,849	1,047	1,299	1,676	2,009	2,109	2,403	2,678	3,261	3,496
60	0,126	0,254	0,387	0,527	0,679	0,848	1,045	1,296	1,671	2,000	2,099	2,390	2,660	3,232	3,460
120	0,126	0,254	0,386	0,526	0,677	0,845	1,041	1,289	1,658	1,980	2,076	2,358	2,617	3,160	3,373
∞	0,126	0,253	0,385	0,524	0,674	0,842	1,036	1,282	1,645	1,960	2,054	2,326	2,576	3,090	3,291

DISTRIBUIÇÃO χ_m^2 (qui - quadrado com m graus de liberdade)

É a melhor medida para se avaliar as diferenças entre uma distribuição de freqüências teórica (E) e a obtida através de uma amostra (O).

A suposição básica é a de que os prováveis erros aleatórios existentes na amostra são constantes e pequenos em toda a distribuição.



$$\chi_m^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} \quad m : \text{graus de liberdade}$$

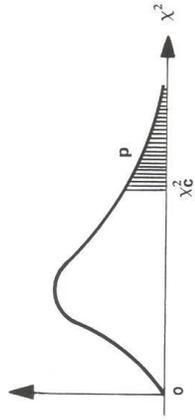
aproximação da Normal para $\chi^2 \rightarrow Z^2 \sim \chi_1^2$

aproximação χ^2 para Normal $\rightarrow \left\{ \begin{array}{l} \text{quando } n \rightarrow \infty \Rightarrow \\ \chi_m^2 \sim N\left[(2n-1)^2 ; 1\right] \end{array} \right.$

TÁBUA II

DISTRIBUIÇÃO DE QUIQUADRADO: χ^2 (n)
VALORES CRÍTICOS DE QUIQUADRADO TAIS QUE

$$P(\chi^2 > \chi^2_c) = p$$



Gras de liberdade

Gras de liberdade

Gras de liberdade	p = 99%	98%	97,5%	95%	90%	80%	70%	50%	30%	20%	10%	5%	4%	2,5%	2%	1%	0,2%	0,1%
1	0,016	0,053	0,001	0,004	0,016	0,064	0,148	0,455	1,074	1,642	2,706	3,841	4,218	5,024	5,412	6,635	9,550	10,827
2	0,020	0,040	0,051	0,103	0,211	0,446	0,713	1,386	2,408	3,219	4,605	5,991	6,438	7,378	7,824	9,210	12,429	13,815
3	0,115	0,185	0,216	0,352	0,584	1,005	1,424	2,366	3,665	4,642	6,251	7,815	8,311	9,348	9,837	11,345	14,796	16,266
4	0,297	0,429	0,484	0,711	1,064	1,649	2,195	3,357	4,878	5,989	7,779	9,488	10,026	11,143	11,668	13,277	16,924	18,467
5	0,554	0,752	0,831	1,145	1,610	2,343	3,000	4,351	6,064	7,289	9,236	11,070	11,644	12,832	13,388	15,086	18,907	20,515
6	0,872	1,134	1,237	1,635	2,204	3,070	3,828	5,348	7,231	8,558	10,645	12,592	13,198	14,449	15,033	16,812	20,791	22,457
7	1,239	1,564	1,690	2,167	2,833	3,822	4,671	6,346	8,383	9,803	12,017	14,067	14,703	16,013	16,622	18,475	22,601	24,322
8	1,646	2,032	2,180	2,733	3,490	4,594	5,527	7,344	9,524	11,030	13,362	15,507	16,171	17,534	18,168	20,090	24,352	26,125
9	2,088	2,532	2,700	3,325	4,168	5,380	6,393	8,343	10,656	12,242	14,684	16,919	17,608	19,023	19,679	21,666	26,056	27,877
10	2,558	3,059	3,247	3,940	4,865	6,179	7,267	9,342	11,781	13,442	15,987	18,307	19,021	20,483	21,161	23,209	27,722	29,588
11	3,053	3,609	3,816	4,575	5,578	6,989	8,148	10,341	12,899	14,631	17,275	19,675	20,412	21,920	22,618	24,725	29,354	31,264
12	3,571	4,178	4,404	5,226	6,304	7,807	9,034	11,340	14,011	15,812	18,549	21,026	21,785	23,337	24,054	26,217	30,957	32,909
13	4,107	4,765	5,009	5,892	7,042	8,634	9,926	12,340	15,119	16,985	19,812	22,362	23,142	24,736	25,472	27,688	32,535	34,528
14	4,660	5,368	5,629	6,571	7,790	9,467	10,821	13,339	16,222	18,151	21,064	23,685	24,485	26,119	26,873	29,141	34,091	36,123
15	5,229	5,985	6,262	7,261	8,547	10,307	11,721	14,339	17,322	19,311	22,307	24,996	25,816	27,488	28,259	30,578	35,628	37,697
16	5,812	6,614	6,908	7,962	9,312	11,152	12,624	15,338	18,418	20,465	23,542	26,296	27,136	28,845	29,633	32,000	37,146	39,252
17	6,408	7,255	7,564	8,672	10,085	12,002	13,531	16,338	19,511	21,615	24,769	27,587	28,445	30,191	30,995	33,409	38,648	40,790
18	7,015	7,906	8,231	9,390	10,865	12,857	14,440	17,338	20,601	22,760	25,989	28,869	29,745	31,526	32,346	34,805	40,136	42,312
19	7,633	8,567	8,906	10,117	11,651	13,716	15,352	18,338	21,689	23,900	27,204	30,144	31,037	32,852	33,687	36,191	41,610	43,820
20	8,260	9,237	9,591	10,851	12,443	14,578	16,266	19,337	22,775	25,038	28,412	31,410	32,321	34,170	35,020	37,566	43,072	45,315
21	8,897	9,915	10,283	11,591	13,240	15,445	17,182	20,337	23,858	26,171	29,615	32,671	33,597	35,479	36,343	38,932	44,522	46,797
22	9,542	10,600	10,982	12,338	14,041	16,314	18,101	21,337	24,939	27,301	30,813	33,524	34,867	36,781	37,659	40,289	45,962	48,268
23	10,196	11,293	11,688	13,091	14,848	17,187	19,021	22,337	26,018	28,429	32,007	35,172	36,131	38,076	38,968	41,638	47,391	49,728
24	10,856	11,992	12,401	13,848	15,659	18,082	19,943	23,337	27,096	29,553	33,196	36,415	37,389	39,364	40,270	42,980	48,812	51,179
25	11,524	12,697	13,120	14,611	16,473	18,940	20,867	24,337	28,172	30,675	34,382	37,652	38,642	40,646	41,566	44,314	50,223	52,620
26	12,198	13,409	13,844	15,379	17,292	19,820	21,792	25,336	29,246	31,795	35,563	38,885	39,889	41,923	42,856	45,642	51,627	54,052
27	12,879	14,125	14,573	16,151	18,114	20,703	22,719	26,336	30,319	32,812	36,741	40,113	41,132	43,194	44,140	46,963	53,022	55,476
28	13,565	14,847	15,308	16,928	18,939	21,588	23,647	27,336	31,391	34,027	37,916	41,337	42,370	44,461	45,419	48,278	54,411	56,893
29	14,256	15,574	16,047	17,708	19,768	22,475	24,577	28,336	32,461	35,139	39,087	42,557	43,604	45,722	46,693	49,588	55,792	58,309
30	14,953	16,306	16,791	18,493	20,599	23,364	25,508	29,336	33,530	36,250	40,256	43,773	44,834	46,979	47,962	50,892	57,1	59,719
p = 99%	98%	97,5%	95%	90%	80%	70%	50%	30%	20%	10%	5%	4%	2,5%	2%	1%	0,2%	0,1%	

DISTRIBUIÇÃO F-SNEDECOR

(ou FISHER-SNEDECOR ou distribuição F)

Sejam duas variáveis aleatórias independentes, U e V , com distribuição χ^2 , cada uma delas, e com, respectivamente, ν_1 e ν_2 graus de liberdade.

A distribuição da variável aleatória F :

$F = \frac{U/\nu_1}{V/\nu_2}$ é chamada distribuição F com ν_1 e ν_2 graus de liberdade.

$$h(f) = \begin{cases} \frac{\Gamma\left[\frac{(\nu_1 + \nu_2)}{2}\right] \cdot \left(\frac{\nu_1}{\nu_2}\right)^{\frac{\nu_1}{2}} \cdot f^{\frac{\nu_1}{2}-1}}{\Gamma\left(\frac{\nu_1}{2}\right) \cdot \Gamma\left(\frac{\nu_2}{2}\right) \cdot \left(1 + \frac{\nu_1 \cdot f}{\nu_2}\right)^{\frac{(\nu_1 + \nu_2)}{2}}}, & \text{se } 0 < f < \infty \\ 0, & \text{caso contrario} \end{cases}$$

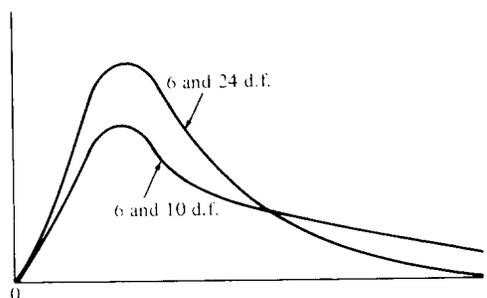


FIGURE 8.14 Typical F -distributions.

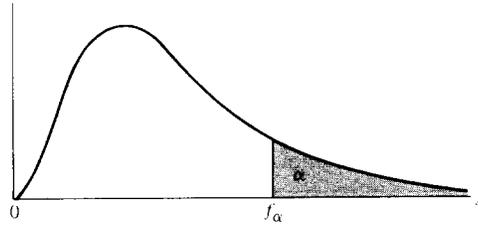


FIGURE 8.15 Tabulated values of the F -distribution.

Sejam duas amostras aleatórias de tamanhos n_1 e n_2 , selecionadas de duas populações com distribuição normal, com variâncias σ_1^2 e σ_2^2 , respectivamente. Sabe-se que:

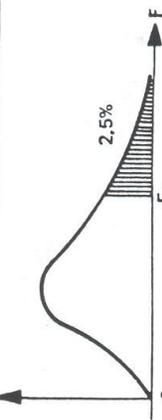
$$\chi_1^2 = \frac{(n_1 - 1) \cdot S_1^2}{\sigma_1^2} \quad \text{e} \quad \chi_2^2 = \frac{(n_2 - 1) \cdot S_2^2}{\sigma_2^2}$$

Se fizermos o quociente dessas duas χ^2 , cada uma delas dividida pelos seus graus de liberdade, teremos uma distribuição F (com n_1 e n_2 graus de liberdade):

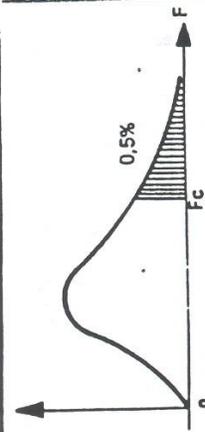
$$F = \frac{\chi_1^2 / (n_1 - 1)}{\chi_2^2 / (n_2 - 1)} = \frac{S_1^2 / \sigma_1^2}{S_2^2 / \sigma_2^2} = \frac{S_1^2 \cdot \sigma_2^2}{S_2^2 \cdot \sigma_1^2}$$

DISTRIBUIÇÃO DE F: 2,5%

TÁBUA V - continuação
DISTRIBUIÇÃO DE FISHER-SNEDECOR-2
VALORES CRÍTICOS DE F TAIS QUE $P(F > F_c) = 0,025$



GRAUS DE LIBERDADE DO DENOMINADOR DE F: n ₂		GRAUS DE LIBERDADE DO NUMERADOR DE F: n ₁																				GRAUS DE LIBERDADE DO DENOMINADOR DE F: n ₂																											
1	2	3	4	5	6	7	8	9	10	12	14	15	16	18	20	24	30	40	60	120	∞	1	2	3	4	5	6	7	8	9	10	12	14	15	16	18	20	24	30	40	60	120	∞						
1	647,8	799,5	864,2	899,6	921,8	937,1	948,2	956,7	963,3	968,6	976,7	982,5	984,9	986,9	990,3	993,1	997,2	1001,1	1006,1	1010,1	1014,1	1018,1	1	647,8	799,5	864,2	899,6	921,8	937,1	948,2	956,7	963,3	968,6	976,7	982,5	984,9	986,9	990,3	993,1	997,2	1001,1	1006,1	1010,1	1014,1	1018,1				
2	38,51	39,00	39,17	39,25	39,30	39,33	39,36	39,37	39,39	39,40	39,41	39,42	39,43	39,44	39,44	39,45	39,46	39,46	39,47	39,48	39,49	39,50	2	38,51	39,00	39,17	39,25	39,30	39,33	39,36	39,37	39,39	39,40	39,41	39,42	39,43	39,44	39,44	39,45	39,46	39,46	39,47	39,48	39,49	39,50				
3	17,44	16,04	15,44	15,10	14,88	14,73	14,62	14,54	14,47	14,42	14,34	14,28	14,25	14,23	14,20	14,17	14,12	14,08	14,04	13,99	13,95	13,90	3	17,44	16,04	15,44	15,10	14,88	14,73	14,62	14,54	14,47	14,42	14,34	14,28	14,25	14,23	14,20	14,17	14,12	14,08	14,04	13,99	13,95	13,90				
4	12,22	10,65	9,98	9,60	9,36	9,20	9,07	8,98	8,90	8,84	8,75	8,68	8,66	8,63	8,59	8,56	8,51	8,46	8,41	8,36	8,31	8,26	4	12,22	10,65	9,98	9,60	9,36	9,20	9,07	8,98	8,90	8,84	8,75	8,68	8,66	8,63	8,59	8,56	8,51	8,46	8,41	8,36	8,31	8,26				
5	10,01	8,43	7,76	7,39	7,15	6,98	6,85	6,76	6,68	6,62	6,52	6,46	6,43	6,40	6,36	6,33	6,28	6,23	6,18	6,12	6,07	6,02	5	10,01	8,43	7,76	7,39	7,15	6,98	6,85	6,76	6,68	6,62	6,52	6,46	6,43	6,40	6,36	6,33	6,28	6,23	6,18	6,12	6,07	6,02				
6	8,81	7,26	6,60	6,23	5,99	5,82	5,70	5,60	5,52	5,46	5,37	5,30	5,27	5,24	5,20	5,17	5,12	5,07	5,01	4,96	4,90	4,85	6	8,81	7,26	6,60	6,23	5,99	5,82	5,70	5,60	5,52	5,46	5,37	5,30	5,27	5,24	5,20	5,17	5,12	5,07	5,01	4,96	4,90	4,85				
7	8,07	6,54	5,89	5,52	5,29	5,12	4,99	4,90	4,82	4,76	4,67	4,60	4,57	4,54	4,50	4,47	4,42	4,36	4,31	4,25	4,20	4,14	7	8,07	6,54	5,89	5,52	5,29	5,12	4,99	4,90	4,82	4,76	4,67	4,60	4,57	4,54	4,50	4,47	4,42	4,36	4,31	4,25	4,20	4,14				
8	7,57	6,06	5,42	5,05	4,82	4,65	4,53	4,43	4,36	4,30	4,20	4,13	4,10	4,08	4,03	3,99	3,95	3,89	3,84	3,78	3,73	3,67	8	7,57	6,06	5,42	5,05	4,82	4,65	4,53	4,43	4,36	4,30	4,20	4,13	4,10	4,08	4,03	3,99	3,95	3,89	3,84	3,78	3,73	3,67				
9	7,21	5,71	5,08	4,72	4,48	4,32	4,20	4,10	4,03	3,96	3,87	3,80	3,77	3,74	3,70	3,67	3,61	3,56	3,51	3,45	3,39	3,33	9	7,21	5,71	5,08	4,72	4,48	4,32	4,20	4,10	4,03	3,96	3,87	3,80	3,77	3,74	3,70	3,67	3,61	3,56	3,51	3,45	3,39	3,33				
10	6,94	5,46	4,83	4,47	4,24	4,07	3,95	3,85	3,78	3,72	3,62	3,55	3,52	3,50	3,45	3,42	3,37	3,31	3,26	3,20	3,14	3,08	10	6,94	5,46	4,83	4,47	4,24	4,07	3,95	3,85	3,78	3,72	3,62	3,55	3,52	3,50	3,45	3,42	3,37	3,31	3,26	3,20	3,14	3,08				
11	6,72	5,26	4,63	4,28	4,04	3,88	3,76	3,66	3,59	3,53	3,43	3,36	3,33	3,30	3,26	3,23	3,17	3,12	3,06	3,00	2,94	2,88	11	6,72	5,26	4,63	4,28	4,04	3,88	3,76	3,66	3,59	3,53	3,43	3,36	3,33	3,30	3,26	3,23	3,17	3,12	3,06	3,00	2,94	2,88				
12	6,55	5,10	4,47	4,12	3,89	3,73	3,61	3,51	3,44	3,37	3,28	3,21	3,18	3,15	3,11	3,07	3,02	2,96	2,91	2,85	2,79	2,72	12	6,55	5,10	4,47	4,12	3,89	3,73	3,61	3,51	3,44	3,37	3,28	3,21	3,18	3,15	3,11	3,07	3,02	2,96	2,91	2,85	2,79	2,72	2,66	2,60	2,54	2,49
13	6,41	4,97	4,35	4,00	3,77	3,60	3,48	3,39	3,31	3,25	3,15	3,08	3,05	3,03	2,98	2,95	2,89	2,84	2,78	2,72	2,66	2,60	13	6,41	4,97	4,35	4,00	3,77	3,60	3,48	3,39	3,31	3,25	3,15	3,08	3,05	3,03	2,98	2,95	2,89	2,84	2,78	2,72	2,66	2,60	2,54	2,49		
14	6,30	4,86	4,24	3,89	3,66	3,50	3,38	3,29	3,21	3,15	3,05	2,98	2,95	2,92	2,88	2,84	2,79	2,73	2,67	2,61	2,55	2,49	14	6,30	4,86	4,24	3,89	3,66	3,50	3,38	3,29	3,21	3,15	3,05	2,98	2,95	2,92	2,88	2,84	2,79	2,73	2,67	2,61	2,55	2,49				
15	6,20	4,77	4,15	3,80	3,58	3,41	3,29	3,20	3,12	3,06	2,96	2,89	2,86	2,84	2,79	2,76	2,70	2,64	2,59	2,52	2,46	2,40	15	6,20	4,77	4,15	3,80	3,58	3,41	3,29	3,20	3,12	3,06	2,96	2,89	2,86	2,84	2,79	2,76	2,70	2,64	2,59	2,52	2,46	2,40				
16	6,12	4,69	4,08	3,73	3,50	3,34	3,22	3,12	3,05	2,99	2,89	2,82	2,79	2,76	2,72	2,68	2,63	2,57	2,51	2,45	2,39	2,32	16	6,12	4,69	4,08	3,73	3,50	3,34	3,22	3,12	3,05	2,99	2,89	2,82	2,79	2,76	2,72	2,68	2,63	2,57	2,51	2,45	2,39	2,32				
17	6,04	4,62	4,01	3,66	3,44	3,28	3,16	3,06	2,98	2,92	2,82	2,75	2,72	2,70	2,65	2,62	2,56	2,50	2,44	2,38	2,32	2,25	17	6,04	4,62	4,01	3,66	3,44	3,28	3,16	3,06	2,98	2,92	2,82	2,75	2,72	2,70	2,65	2,62	2,56	2,50	2,44	2,38	2,32					
18	5,98	4,56	3,95	3,61	3,38	3,22	3,10	3,01	2,93	2,87	2,77	2,70	2,67	2,64	2,60	2,56	2,50	2,44	2,38	2,32	2,26	2,19	18	5,98	4,56	3,95	3,61	3,38	3,22	3,10	3,01	2,93	2,87	2,77	2,70	2,67	2,64	2,60	2,56	2,50	2,44	2,38	2,32	2,26	2,19				
19	5,92	4,51	3,90	3,56	3,33	3,17	3,05	2,96	2,88	2,82	2,72	2,65	2,62	2,59	2,55	2,51	2,45	2,39	2,33	2,27	2,20	2,13	19	5,92	4,51	3,90	3,56	3,33	3,17	3,05	2,96	2,88	2,82	2,72	2,65	2,62	2,59	2,55	2,51	2,45	2,39	2,33	2,27	2,20	2,13				
20	5,87	4,46	3,86	3,51	3,29	3,13	3,01	2,91	2,84	2,77	2,68	2,60	2,57	2,55	2,50	2,46	2,41	2,35	2,29	2,22	2,16	2,09	20	5,87	4,46	3,86	3,51	3,29	3,13	3,01	2,91	2,84	2,77	2,68	2,60	2,57	2,55	2,50	2,46	2,41	2,35	2,29	2,22	2,16	2,09				
21	5,83	4,42	3,82	3,48	3,25	3,09	2,97	2,87	2,80	2,73	2,64	2,56	2,53	2,51	2,46	2,42	2,37	2,31	2,25	2,18	2,11	2,04	21	5,83	4,42	3,82	3,48	3,25	3,09	2,97	2,87	2,80	2,73	2,64	2,56	2,53	2,51	2,46	2,42	2,37	2,31	2,25	2,18	2,11	2,04				
22	5,79	4,38	3,78	3,44	3,22	3,05	2,93	2,84	2,76	2,70	2,60	2,53	2,50	2,47	2,42	2,39	2,33	2,27	2,21	2,14	2,08	2,00	22	5,79	4,38	3,78	3,44	3,22	3,05	2,93	2,84	2,76	2,70	2,60	2,53	2,50	2,47	2,42	2,39	2,33	2,27	2,21	2,14	2,08	2,00				
23	5,75	4,35	3,75	3,41	3,18	3,02	2,90	2,81	2,73	2,67	2,57	2,50	2,47	2,44	2,39	2,36	2,30	2,24	2,18	2,11	2,04	1,97	23	5,75	4,35	3,75	3,41	3,18	3,02	2,90	2,81	2,73	2,67	2,57	2,50	2,47	2,44	2,39	2,36	2,30	2,24	2,18	2,11	2,04	1,97				
24	5,72	4,32	3,72	3,38	3,15	2,99	2,87	2,78	2,70	2,64	2,54	2,47	2,44	2,41	2,37	2,33	2,27	2,21	2,15	2,08	2,01	1,94	24	5,72	4,32	3,72	3,38	3,15	2,99	2,87	2,78	2,70	2,64	2,54	2,47	2,44	2,41	2,37	2,33	2,27	2,21	2,15	2,08	2,01	1,94				
25	5,69	4,29	3,69	3,35	3,13	2,97	2,85	2,75	2,68	2,61	2,51	2,44	2,41	2,38	2,34	2,30	2,24	2,18	2,12	2,05	1,98	1,91	25	5,69	4,29	3,69	3,35	3,13	2,97	2,85	2,75	2,68	2,61	2,51	2,44	2,41	2,38	2,34	2,30	2,24	2,18	2,12	2,05	1,98	1,91				
26	5,66	4,27	3,67	3,33	3,10	2,94	2,82	2,73	2,65	2,59	2,49	2,42	2,39	2,36	2,31	2,28	2,22	2,16	2,09	2,03	1,95	1,88	26	5,66	4,27	3,67	3,33	3,10	2,94	2,82	2,73	2,65	2,59	2,49	2,42	2,39	2,36	2,31	2,28	2,22	2,16	2,09	2,03	1,95	1,88				
27	5,63	4,24	3,65	3,31	3,08	2,92	2,80	2,71	2,63	2,57	2,47	2,40	2,36	2,34	2,29	2,25	2,19	2,13	2,07	2,00	1,93	1,85	27	5,63	4,24	3,65	3,31	3,08	2,92	2,80	2,71	2,63	2,57	2,47	2,40	2,36	2,34	2,29	2,25	2,19	2,13	2,07	2,00	1,93	1,85				
28	5,61	4,22	3,63	3,29	3,06	2,90	2,78	2,69	2,61	2,55	2,45	2,37	2,34	2,32	2,27	2,23	2,17	2,11	2,05	1,98	1,91	1,83	28	5,61	4,22	3,63	3,29	3,06	2,90	2,78	2,69	2,61	2,55	2,45	2,37	2,34	2,32												



TÁBUA V - continuação

DISTRIBUIÇÃO DE FISHER-SNEDECOR-4
VALORES CRÍTICOS DE F TAIS QUE $P(F > F_c) = 0,005$

GRAUS DE LIBERDADE DO NUMERADOR DE F: n1

Gráus de liberdade do denominador de F: n2	1	2	3	4	5	6	7	8	9	10	12	14	15	16	18	20	24	30	40	60	120	∞
1	16211	20000	21815	22500	23058	23437	23715	23925	24091	24224	24426	24630	24881	24877	24836	24840	25044	25044	25148	25253	25359	25465
2	199,5	199,0	199,2	199,2	199,3	199,3	199,4	199,4	199,4	199,4	199,4	199,4	199,4	199,4	199,4	199,4	199,5	199,5	199,5	199,5	199,5	199,5
3	55,85	49,80	47,47	46,19	45,39	44,84	44,43	44,13	43,88	43,69	43,59	43,52	43,48	43,46	43,45	43,44	43,43	43,42	43,41	43,40	43,39	43,38
4	31,33	28,28	27,46	27,15	26,92	26,76	26,64	26,55	26,48	26,42	26,37	26,33	26,30	26,28	26,26	26,25	26,24	26,23	26,22	26,21	26,20	26,19
5	22,78	18,31	16,53	15,58	14,94	14,51	14,20	13,96	13,77	13,62	13,52	13,45	13,40	13,37	13,35	13,34	13,33	13,32	13,31	13,30	13,29	13,28
6	18,63	14,54	12,92	12,03	11,46	11,07	10,79	10,57	10,39	10,25	10,03	9,88	9,81	9,76	9,66	9,59	9,47	9,36	9,24	9,12	9,00	8,88
7	16,24	12,40	10,88	10,05	9,52	9,16	8,89	8,68	8,51	8,38	8,18	8,03	7,97	7,91	7,82	7,75	7,65	7,53	7,42	7,31	7,19	7,06
8	14,69	11,04	9,60	8,81	8,30	7,95	7,69	7,50	7,34	7,21	7,01	6,87	6,81	6,76	6,68	6,61	6,50	6,40	6,29	6,18	6,06	5,95
9	13,81	10,11	8,72	7,96	7,47	7,13	6,88	6,69	6,54	6,42	6,23	6,09	6,03	5,98	5,90	5,83	5,73	5,62	5,52	5,41	5,30	5,19
10	12,83	9,43	8,08	7,34	6,87	6,54	6,30	6,12	5,97	5,85	5,66	5,53	5,47	5,42	5,34	5,27	5,17	5,07	4,97	4,86	4,75	4,64
11	12,23	8,91	7,60	6,88	6,42	6,10	5,86	5,68	5,54	5,42	5,24	5,10	5,05	5,00	4,92	4,86	4,76	4,65	4,55	4,44	4,34	4,23
12	11,75	8,51	7,23	6,52	6,07	5,76	5,52	5,35	5,20	5,09	4,91	4,77	4,72	4,67	4,59	4,53	4,43	4,33	4,23	4,12	4,01	3,90
13	11,37	8,19	6,93	6,23	5,79	5,48	5,25	5,08	4,94	4,82	4,64	4,51	4,46	4,41	4,33	4,27	4,17	4,07	3,97	3,87	3,76	3,65
14	11,06	7,92	6,68	6,00	5,56	5,26	5,03	4,86	4,72	4,60	4,43	4,30	4,25	4,20	4,12	4,06	3,96	3,86	3,76	3,66	3,55	3,44
15	10,80	7,70	6,48	5,80	5,37	5,07	4,85	4,67	4,54	4,42	4,25	4,12	4,07	4,02	3,95	3,88	3,79	3,69	3,58	3,48	3,37	3,26
16	10,58	7,51	6,30	5,64	5,21	4,91	4,69	4,52	4,38	4,27	4,10	3,97	3,92	3,87	3,80	3,73	3,64	3,54	3,44	3,33	3,22	3,11
17	10,38	7,35	6,16	5,50	5,07	4,78	4,56	4,39	4,25	4,14	3,97	3,84	3,79	3,75	3,67	3,61	3,51	3,41	3,31	3,21	3,10	2,98
18	10,22	7,21	6,03	5,37	4,96	4,68	4,44	4,28	4,14	4,03	3,88	3,73	3,68	3,64	3,56	3,50	3,40	3,30	3,20	3,10	2,99	2,87
19	10,07	7,09	5,92	5,27	4,86	4,58	4,34	4,18	4,04	3,93	3,78	3,64	3,59	3,54	3,46	3,40	3,31	3,21	3,11	3,00	2,89	2,78
20	9,94	6,99	5,82	5,17	4,76	4,47	4,26	4,09	3,96	3,85	3,68	3,55	3,50	3,46	3,38	3,32	3,22	3,12	3,02	2,92	2,81	2,69
21	9,83	6,89	5,73	5,09	4,68	4,39	4,18	4,01	3,88	3,77	3,60	3,48	3,43	3,38	3,30	3,24	3,15	3,05	2,95	2,84	2,73	2,61
22	9,73	6,81	5,65	5,02	4,61	4,32	4,11	3,94	3,81	3,70	3,54	3,41	3,36	3,31	3,24	3,18	3,08	2,98	2,88	2,77	2,66	2,55
23	9,63	6,73	5,58	4,95	4,54	4,25	4,04	3,87	3,74	3,63	3,47	3,34	3,30	3,25	3,18	3,12	3,02	2,92	2,82	2,71	2,60	2,48
24	9,55	6,66	5,52	4,89	4,48	4,20	3,99	3,83	3,69	3,59	3,42	3,30	3,25	3,20	3,12	3,06	2,97	2,87	2,77	2,66	2,55	2,43
25	9,48	6,60	5,48	4,84	4,43	4,15	3,94	3,78	3,64	3,54	3,37	3,25	3,20	3,15	3,07	3,01	2,92	2,82	2,72	2,61	2,50	2,38
26	9,41	6,54	5,41	4,79	4,38	4,10	3,89	3,73	3,60	3,49	3,33	3,20	3,15	3,11	3,03	2,97	2,87	2,77	2,67	2,56	2,45	2,33
27	9,34	6,49	5,36	4,74	4,34	4,06	3,85	3,69	3,56	3,45	3,28	3,16	3,11	3,07	2,99	2,93	2,83	2,73	2,63	2,52	2,41	2,29
28	9,28	6,44	5,32	4,70	4,30	4,02	3,81	3,65	3,52	3,41	3,25	3,12	3,07	3,03	2,95	2,89	2,79	2,69	2,59	2,48	2,37	2,25
29	9,23	6,40	5,28	4,66	4,26	3,98	3,77	3,61	3,48	3,38	3,21	3,09	3,04	2,99	2,92	2,86	2,76	2,66	2,56	2,45	2,33	2,21
30	9,18	6,35	5,24	4,62	4,23	3,95	3,74	3,58	3,45	3,34	3,18	3,06	3,01	2,96	2,88	2,82	2,73	2,63	2,52	2,42	2,30	2,18
40	8,83	6,07	4,98	4,37	3,99	3,71	3,51	3,35	3,22	3,12	2,95	2,83	2,78	2,73	2,66	2,60	2,50	2,40	2,30	2,18	2,06	1,93
60	8,49	5,79	4,73	4,14	3,76	3,49	3,29	3,13	3,01	2,90	2,74	2,62	2,57	2,52	2,45	2,39	2,29	2,19	2,08	1,96	1,83	1,69
120	8,18	5,54	4,50	3,92	3,55	3,28	3,09	2,93	2,81	2,71	2,54	2,43	2,37	2,33	2,26	2,19	2,09	1,98	1,87	1,75	1,61	1,43
∞	7,88	5,30	4,28	3,72	3,35	3,09	2,90	2,74	2,62	2,52	2,36	2,24	2,19	2,14	2,06	2,00	1,90	1,79	1,67	1,52	1,36	1,00

ANEXO 2

EXERCÍCIOS

EXERCÍCIO 1

Amostra de crianças (dados hipotéticos)

REC	PESO	IDADE	ALTURA
1	64	8	57
2	71	10	59
3	53	6	49
4	67	11	62
5	55	8	51
6	58	7	50
7	77	10	55
8	57	9	48
9	56	10	42
10	51	6	42
11	76	12	61
12	68	9	57

PESO	Freq	Percent	Cum.
51	1	8.3%	8.3%
53	1	8.3%	16.7%
55	1	8.3%	25.0%
56	1	8.3%	33.3%
57	1	8.3%	41.7%
58	1	8.3%	50.0%
64	1	8.3%	58.3%
67	1	8.3%	66.7%
68	1	8.3%	75.0%
71	1	8.3%	83.3%
76	1	8.3%	91.7%
77	1	8.3%	100.0%
Total	12	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
12	753	62.750	80.750	8.986	2.594
Minimum	25%ile	Median	75%ile	Maximum	Mode
51.000	55.500	61.000	69.500	77.000	51.000

Student's "t", testing whether mean differs from zero.
T statistic = 24.190, df = 11 p-value = 0.00000

IDADE	Freq	Percent	Cum.
6	2	16.7%	16.7%
7	1	8.3%	25.0%
8	2	16.7%	41.7%
9	2	16.7%	58.3%
10	3	25.0%	83.3%
11	1	8.3%	91.7%
12	1	8.3%	100.0%
Total	12	100.0%	

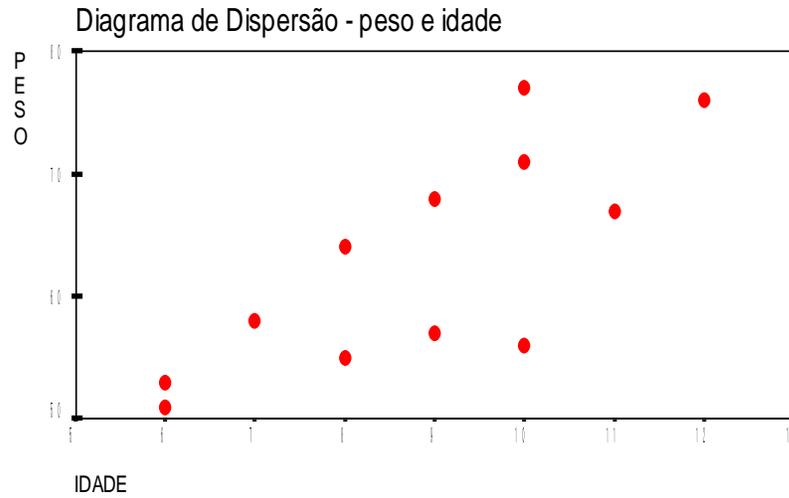
Total	Sum	Mean	Variance	Std Dev	Std Err
12	106	8.833	3.606	1.899	0.548
Minimum	25%ile	Median	75%ile	Maximum	Mode
6.000	7.500	9.000	10.000	12.000	10.000

Student's "t", testing whether mean differs from zero.
T statistic = 16.114, df = 11 p-value = 0.00000

ALTURA	Freq	Percent	Cum.
42	2	16.7%	16.7%
48	1	8.3%	25.0%
49	1	8.3%	33.3%
50	1	8.3%	41.7%
51	1	8.3%	50.0%
55	1	8.3%	58.3%
57	2	16.7%	75.0%
59	1	8.3%	83.3%
61	1	8.3%	91.7%
62	1	8.3%	100.0%
Total	12	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
12	633	52.750	46.568	6.824	1.970
Minimum	25%ile	Median	75%ile	Maximum	Mode
42.000	48.500	53.000	58.000	62.000	42.000

Student's "t", testing whether mean differs from zero.
T statistic = 26.777, df = 11 p-value = 0.00000



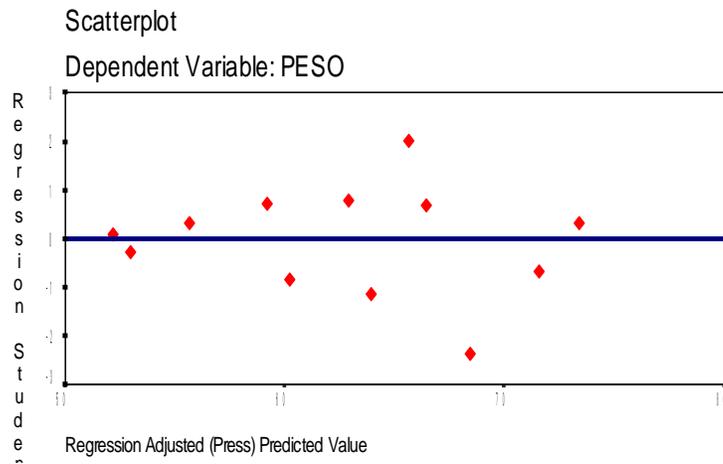
Modelo 1 : $Y = \beta_0 + \beta_1(X_1 = idade)$

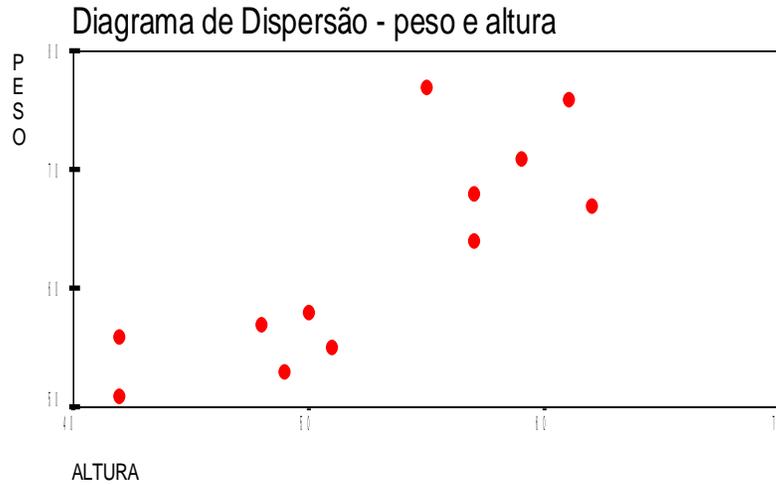
Correlation coefficient: $r = 0.77$ $r^2 = 0.59$
 95% confidence limits: $0.03 < r^2 < 0.87$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	526.3929	526.3929	14.55
Residuals	10	361.8571	36.1857	
Total	11	888.2500		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
IDADE	8.8333	3.6428571	1.514688	5.771026	0.955115	14.5470
Y-Intercept		30.5714286				





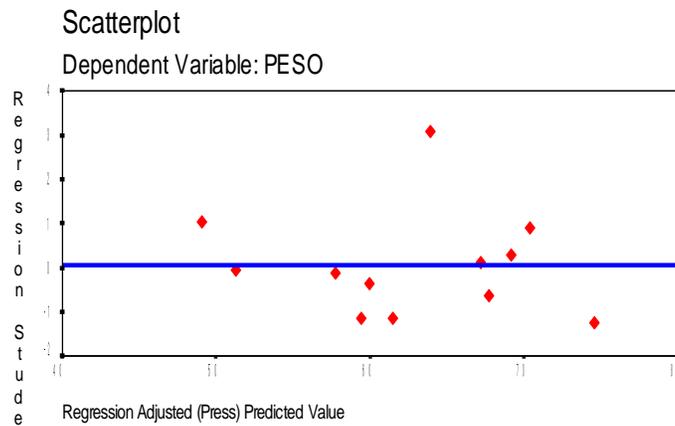
Modelo 2 : $Y = \beta_0 + \beta_2(X_2 = altura)$

Correlation coefficient: $r = 0.81$ $r^2 = 0.66$
 95% confidence limits: $0.14 < r^2 < 0.90$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	588.9225	588.9225	19.67
Residuals	10	299.3275	29.9327	
Total	11	888.2500		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
ALTURA	52.7500	1.0722304	0.533610	1.610851	0.241731	19.6749
Y-Intercept		6.1898487				



Programa para fazer a análise de resíduos no STATA

- gen yestid=0.5714+(3.6428*idade)
- gen erroid=peso-yestid
- tab erroid ⇒ verificar qual o valor da média (M) e do desvio padrão (DP)
- gen zerroid = (erroid-M)/DP

MATRIZ DE CORRELAÇÃO

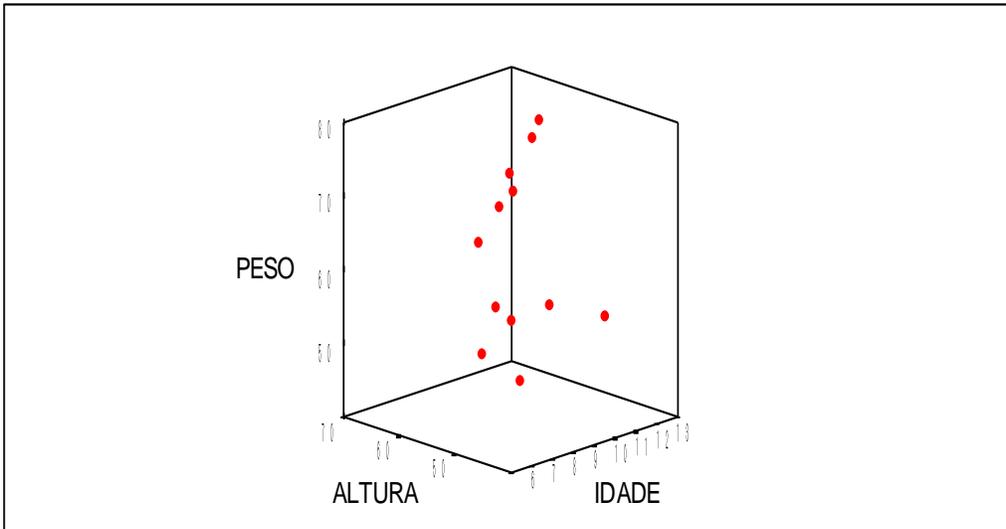
- - Correlation Coefficients - -

	PESO	IDADE	ALTURA
PESO	1,0000	,7698	,8143
IDADE	,7698	1,0000	,6138
ALTURA	,8143	,6138	1,0000

Modelo 3 : $Y = \beta_0 + \beta_1(X_1 = idade) + \beta_2(X_2 = altura)$

Correlation coefficient:		r ² = 0.78	ra ² = 0.73			
Source	df	Sum of Squares	Mean Square	F-statistic		
Regression	2	692.8226	346.4113	15.95		
Residuals	9	195.4274	21.7142			
Total	11	888.2500				
B Coefficients						
		B	95% confidence		Std Error	Partial
Variable	Mean	coefficient	Lower	Upper		F-test
ALTURA	52.7500	0.7220380	0.132046	1.312030	0.260805	7.6646
IDADE	8.8333	2.0501264	-0.070061	4.170314	0.937226	4.7849
Y-Intercept		6.5530483				

Modelo múltiplo - peso, idade e altura



EXERCÍCIO 2

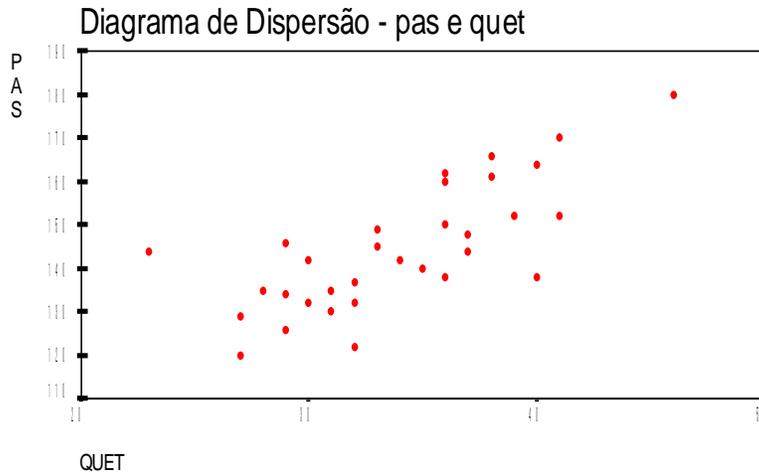
Tabela 1. Relação dos pacientes atendidos no ambulatório X, segundo número do registro, pressão arterial sistólica (mm/Hg), índice de Quetelet (kg/m²), idade (anos) e hábito de fumar. Hospital Y, São Paulo, janeiro de 1995.

REC	PAS	QUET	AGE	SMK
1	135	28	45	0
2	122	32	41	0
3	130	31	49	0
4	148	37	52	0
5	146	29	54	1
6	129	27	47	1
7	162	36	60	1
8	160	36	48	1
9	144	23	44	1
10	180	46	64	1
11	166	38	59	1
12	138	40	51	1
13	152	41	64	0
14	138	36	56	0
15	140	35	54	1
16	134	29	50	1
17	145	33	49	1
18	142	30	46	1
19	135	31	57	0
20	142	34	56	0
21	150	36	56	1
22	144	37	58	0
23	137	32	53	0
24	132	32	50	0
25	149	33	54	1
26	132	30	48	1
27	120	27	43	0
28	126	29	43	1
29	161	38	63	0
30	170	41	63	1
31	152	39	62	0
32	164	40	65	0

Fonte: Kleinbaum, D.G. et al. Applied Regression analysis and Other Multivariable Methods. PWS-KENT Publishing company, Boston, 1988.

- Correlation Coefficients - -

	PAS	AGE	QUET	SMK
PAS	1,0000	,7752	,7433	,2473
AGE	,7752	1,0000	,8011	-,1395
QUET	,7433	,8011	1,0000	-,0744
SMK	,2473	-,1395	-,0744	1,0000



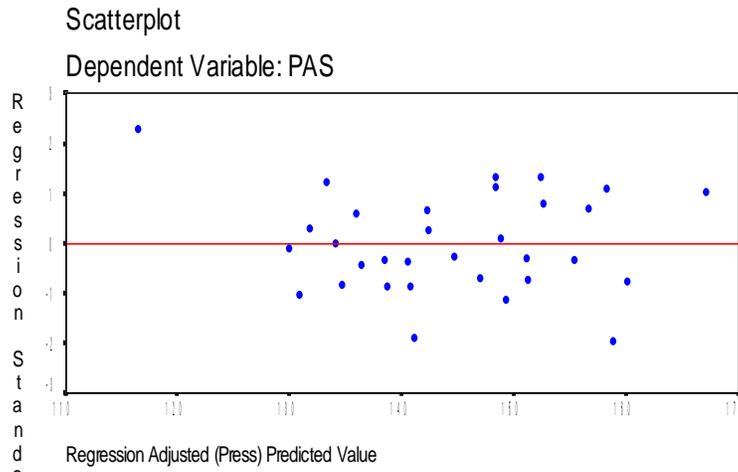
Modelo 1 : $Y = \beta_0 + \beta_1(X_1 = QUET)$

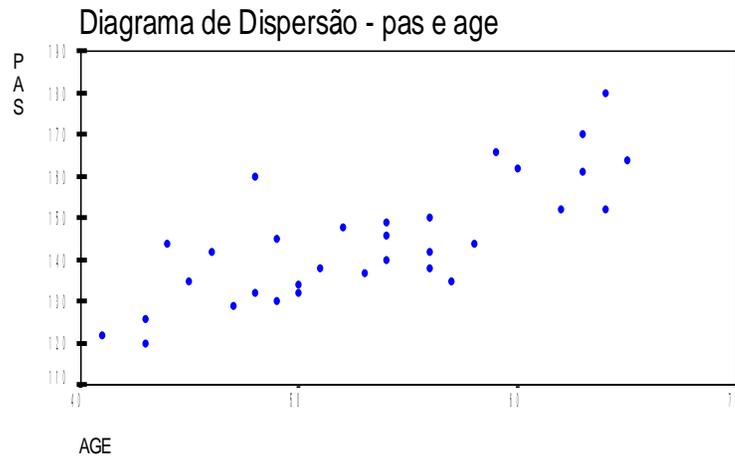
Correlation coefficient: $r = 0.74$ $r^2 = 0.55$
 95% confidence limits: $0.25 < r^2 < 0.76$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	3549.8492	3549.8492	37.03
Residuals	30	2876.1195	95.8707	
Total	31	6425.9688		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
QUET	33.9375	2.1066573	1.399601	2.813714	0.346204	37.0275
Y-Intercept		73.0365682				





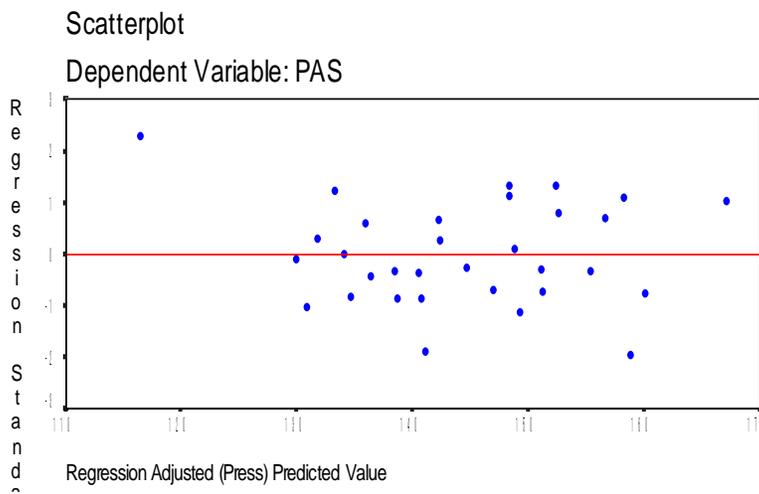
Modelo 2 : $Y = \beta_0 + \beta_2(X_2 = AGE)$

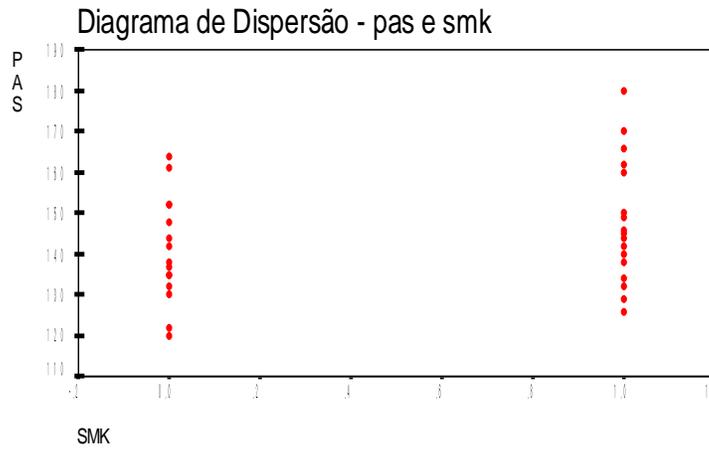
Correlation coefficient: $r = 0.78$ $r^2 = 0.60$
 95% confidence limits: $0.32 < r^2 < 0.79$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	3861.6304	3861.6304	45.18
Residuals	30	2564.3384	85.4779	
Total	31	6425.9688		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	53.2500	1.6045000	1.116967	2.092033	0.238716	45.1769
Y-Intercept		59.0916250				





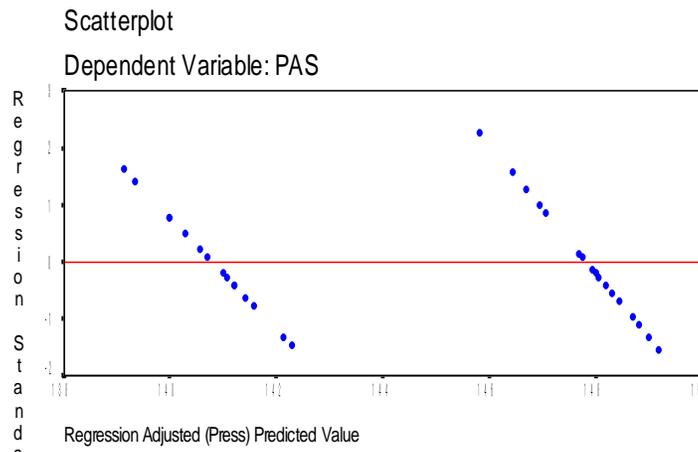
Modelo 3 : $Y = \beta_0 + \beta_3(X_3 = SMK)$

Correlation coefficient: $r = 0.25$ $r^2 = 0.06$
 95% confidence limits: $-0.29 < r^2 < 0.40$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	393.0982	393.0982	1.95
Residuals	30	6032.8706	201.0957	
Total	31	6425.9688		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
SMK	0.5313	7.0235294	-3.236024	17.283083	5.023498	1.9548
Y-Intercept		140.8000000				



$$\text{Modelo 4 : } Y = \beta_0 + \beta_1(X_1 = \text{QUET}) + \beta_2(X_2 = \text{AGE})$$

Correlation coefficient: $r^2 = 0.64$ $ra^2 = 0.62$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	2	4129.6303	2064.8152	26.08
Residuals	29	2296.3384	79.1841	
Total	31	6425.9688		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	53.2500	1.0387397	0.253605	1.823875	0.383878	7.3219
QUET	33.9375	0.9671116	-0.108063	2.042286	0.525688	3.3845
Y-Intercept		56.3970102				

Modelo 5 :

$$Y = \beta_0 + \beta_1(X_1 = \text{QUET}) + \beta_2(X_2 = \text{AGE}) + \beta_3(X_3 = \text{SMK})$$

Correlation coefficient: $r^2 = 0.76$ $ra^2 = 0.74$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	3	4902.4113	1634.1371	30.03
Residuals	28	1523.5575	54.4128	
Total	31	6425.9688		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	53.2500	1.2007494	0.542975	1.858524	0.321109	13.9830
QUET	33.9375	0.8633479	-0.031089	1.757785	0.436641	3.9095
SMK	0.5313	9.9647130	4.548300	15.381126	2.644155	14.2022
Y-Intercept		45.9977218				

MODELOS PARA OS FUMANTES (SMK=1)

$$\text{Modelo 6: } Y = \beta_0 + \beta_1(X_1 = \text{QUET})$$

Correlation coefficient: $r = 0.75$ $r^2 = 0.56$
 95% confidence limits: $0.11 < r^2 < 0.82$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	2078.9803	2078.9803	19.21
Residuals	15	1623.4903	108.2327	
Total	16	3702.4706		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
QUET	33.5882	1.9729075	1.013408	2.932407	0.450154	19.2084
Y-Intercept		81.5570485				

$$\text{Modelo 7: } Y = \beta_0 + \beta_2(X_2 = \text{AGE})$$

Correlation coefficient: $r = 0.82$ $r^2 = 0.67$
 95% confidence limits: $0.29 < r^2 < 0.87$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	2494.3368	2494.3368	30.97
Residuals	15	1208.1338	80.5423	
Total	16	3702.4706		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	52.3529	1.9501345	1.203199	2.697070	0.350428	30.9693
Y-Intercept		45.7282511				

$$\text{Modelo 8: } Y = \beta_0 + \beta_1(X_1 = \text{QUET}) + \beta_2(X_2 = \text{AGE})$$

Correlation coefficient: $r^2 = 0.70$ $ra^2 = 0.65$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	2	2584.7814	1292.3907	16.19
Residuals	14	1117.6892	79.8349	
Total	16	3702.4706		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	52.3529	1.4579843	0.215610	2.700359	0.579241	6.3356
QUET	33.5882	0.6832015	-0.693523	2.059926	0.641880	1.1329
Y-Intercept		48.5462276				

MODELOS PARA OS NÃO FUMANTES (SMK=0)

modelo 9: $Y = \beta_0 + \beta_1(X_1 = QUET)$

Correlation coefficient: $r = 0.86$ $r^2 = 0.74$
 95% confidence limits: $0.37 < r^2 < 0.91$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	1733.1467	1733.1467	37.72
Residuals	13	597.2533	45.9426	
Total	14	2330.4000		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
QUET	34.3333	2.5752551	1.669425	3.481086	0.419286	37.7242
Y-Intercept		52.3829082				

Modelo 10: $Y = \beta_0 + \beta_2(X_2 = AGE)$

Correlation coefficient: $r = 0.90$ $r^2 = 0.80$
 95% confidence limits: $0.49 < r^2 < 0.93$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	1	1870.9887	1870.9887	52.94
Residuals	13	459.4113	35.3393	
Total	14	2330.4000		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	54.2667	1.5152160	1.065328	1.965104	0.208242	52.9435
Y-Intercept		58.5742801				

Modelo 11: $Y = \beta_0 + \beta_1(X_1 = QUET) + \beta_2(X_2 = AGE)$

Correlation coefficient: $r^2 = 0.84$ $ra^2 = 0.81$

Source	df	Sum of Squares	Mean Square	F-statistic
Regression	2	1953.2436	976.6218	31.07
Residuals	12	377.1564	31.4297	
Total	14	2330.4000		

B Coefficients

Variable	Mean	B coefficient	95% confidence		Std Error	Partial F-test
			Lower	Upper		
AGE	54.2667	0.9958779	0.175908	1.815848	0.376330	7.0028
QUET	34.3333	1.0750870	-0.372890	2.523064	0.664558	2.6171
Y-Intercept		49.8457061				

EXERCÍCIO 3

ANÁLISE DO BANCO DE DADOS LOW.TXT

Table 4.1 Code Sheet for the Variables in the Low Birth Weight Data Set. Data Are Listed in Appendix 1.

Variable	Abbreviation
Identification Code	ID
Low Birth Weight (0 = Birth Weight \geq 2500g, 1 = Birth Weight < 2500g)	LOW
Age of the Mother in Years	AGE
Weight in Pounds at the Last Menstrual Period	LWT
Race (1 = White, 2 = Black, 3 = Other)	RACE
Smoking Status During Pregnancy (1 = Yes, 0 = No)	SMOKE
History of Premature Labor (0 = None, 1 = One, etc.)	PTL
History of Hypertension (1 = Yes, 0 = No)	HT
Presence of Uterine Irritability (1 = Yes, 0 = No)	UI
Number of Physician Visits During the First Trimester (0 = None, 1 = One, 2 = Two, etc.)	FTV
Birth Weight in Grams	BWT

CRUZAMENTOS DE LOW COM AS VARIÁVEIS INDEPENDENTES

AGE	LOW		Total
	0	1	
14	1	2	3
15	1	2	3
16	6	1	7
17	7	5	12
18	8	2	10
19	13	3	16
20	10	8	18
21	7	5	12
22	11	2	13
23	8	5	13
24	8	5	13
25	9	6	15
26	4	4	8
27	1	2	3
28	7	2	9
29	6	1	7
30	6	1	7
31	4	1	5
32	5	1	6
33	3	0	3
34	0	1	1
35	2	0	2
36	2	0	2
45	1	0	1
Total	130	59	189

An expected value is < 5. Chi square not valid.

Chi square = 23.57
 Degrees of freedom = 23
 p value = 0.42810868

RACE	LOW		Total
	0	1	
1	73	23	96
2	15	11	26
3	42	25	67
Total	130	59	189

Chi square = 5.00
 Degrees of freedom = 2

p value = 0.08188770

LWT	LOW		Total
	0	1	
80	0	1	1
85	1	1	2
89	0	1	1
90	3	0	3
91	0	1	1
92	0	1	1
94	0	1	1
95	5	1	6
96	0	1	1
97	0	1	1
98	1	0	1
100	3	2	5
101	0	1	1
102	0	2	2
103	2	1	3
105	2	5	7
107	2	0	2
108	1	0	1
109	1	1	2
110	7	4	11
112	3	1	4
113	3	0	3
115	5	2	7
116	1	0	1
117	1	1	2
118	2	0	2
119	3	0	3
120	12	5	17
121	3	1	4
122	1	1	2
123	3	0	3
124	2	0	2
125	2	1	3
127	1	0	1
128	1	1	2
129	1	0	1
130	6	7	13
131	1	0	1
132	2	1	3
133	2	0	2
134	3	0	3
135	4	0	4
137	1	0	1
138	1	1	2
140	3	0	3
141	1	0	1
142	0	2	2
147	2	0	2
148	0	1	1
150	3	2	5
153	1	0	1
154	1	1	2
155	2	1	3
158	2	0	2
160	2	0	2
165	0	1	1
167	1	0	1
168	1	0	1
169	2	0	2

170		4	0		4
175		1	0		1
182		1	0		1
184		1	0		1
185		1	0		1
186		1	0		1
187		0	2		2
189		1	0		1
190		1	1		2
200		0	1		1
202		1	0		1
215		1	0		1
229		1	0		1
235		1	0		1
241		1	0		1
250		1	0		1

Total		130	59		189

		LOW			
SMOKE		0	1		Total

0		86	29		115
1		44	30		74

Total		130	59		189

Single Table Analysis

Odds ratio 2.02
 Cornfield 95% confidence limits for OR 1.02 < OR < 4.00
 Maximum likelihood estimate of OR (MLE) 2.01
 Exact 95% confidence limits for MLE 1.03 < OR < 3.96
 Exact 95% Mid-P limits for MLE 1.07 < OR < 3.79
 Probability of MLE >= 2.01 if population OR = 1.0 0.02021253
 RISK RATIO (RR) (Outcome:LOW=0; Exposure:SMOKE=0) 1.26
 95% confidence limits for RR 1.01 < RR < 1.56

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	4.92	0.02649064 <---
Mantel-Haenszel:	4.90	0.02689321 <---
Yates corrected:	4.24	0.03957697 <---

		LOW			
PTL		0	1		Total

0		118	41		159
1		8	16		24
2		3	2		5
3		1	0		1

Total		130	59		189

An expected value is < 5. Chi square not valid.
 Chi square = 16.86
 Degrees of freedom = 3
 p value = 0.00075379 <---

HT	LOW		Total
	0	1	
0	125	52	177
1	5	7	12
Total	130	59	189

Single Table Analysis

Odds ratio 3.37
 Cornfield 95% confidence limits for OR 0.89 < OR < 13.05*
 *May be inaccurate
 Maximum likelihood estimate of OR (MLE) 3.34
 Exact 95% confidence limits for MLE 0.87 < OR < 14.00
 Exact 95% Mid-P limits for MLE 0.99 < OR < 12.00
 Probability of MLE >= 3.34 if population OR = 1.0 0.04212076

RISK RATIO (RR) (Outcome:LOW=0; Exposure:HT=0) 1.69
 95% confidence limits for RR 0.86 < RR < 3.33
 Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	4.39	0.03619370 <---
Mantel-Haenszel:	4.36	0.03669012 <---
Yates corrected:	3.14	0.07625038
Fisher exact: 1-tailed P-value:		0.0421208 <---
2-tailed P-value:		0.0516119

An expected value is less than 5; recommend Fisher exact results.

UI	LOW		Total
	0	1	
0	116	45	161
1	14	14	28
Total	130	59	189

Single Table Analysis

Odds ratio 2.58
 Cornfield 95% confidence limits for OR 1.05 < OR < 6.34
 Maximum likelihood estimate of OR (MLE) 2.56
 Exact 95% confidence limits for MLE 1.04 < OR < 6.32
 Exact 95% Mid-P limits for MLE 1.12 < OR < 5.89
 Probability of MLE \geq 2.56 if population OR = 1.0 0.01984413
 RISK RATIO (RR) (Outcome:LOW=0; Exposure:UI=0) 1.44
 95% confidence limits for RR 0.98 < RR < 2.11

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	5.40	0.02012792 <---
Mantel-Haenszel:	5.37	0.02046028 <---
Yates corrected:	4.42	0.03546443 <---

FTV	LOW		Total
	0	1	
0	64	36	100
1	36	11	47
2	23	7	30
3	3	4	7
4	3	1	4
6	1	0	1
Total	130	59	189

An expected value is < 5. Chi square not valid.

Chi square = 5.99
 Degrees of freedom = 5 p value = 0.30748600

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
19.50	AGE (2)	0.1164	0.3575	0.3255	0.7448	1.123	0.557	2.264	BASELINE
CONSTANT		-0.8755	0.3073	-2.8487	0.0044				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360
 LOG-LIKELIHOOD (CYCLE 3) = -117.2826

-2*MAXIMIZED LOG-LIKELIHOOD= 234.5653

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	0.1060	1	0.7448	
LIKELIHOOD RATIO	0.1067	1	0.7439	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

 ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.000

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Sunday, Jan 26, 1998 14:11:26.86 Page 4

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
130.50	LWT (2)	-0.6395	0.4705	-1.3592	0.1741	0.528	0.210	1.327	BASELINE
150.50	LWT (3)	-0.8713	0.4608	-1.8907	0.0587	0.418	0.170	1.032	BASELINE
	CONSTANT	-0.5500	0.1872	-2.9383	0.0033				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -114.8075

-2*MAXIMIZED LOG-LIKELIHOOD= 229.6150

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	4.8429	2	0.0888	
LIKELIHOOD RATIO	5.0570	2	0.0798	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.0000010000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	189
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.060

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
1.50	RACE (2)	0.8448	0.4634	1.8230	0.0683	2.328	0.938	5.772	BASELINE
2.50	RACE (3)	0.6362	0.3478	1.8290	0.0674	1.889	0.955	3.736	BASELINE
	CONSTANT	-1.1550	0.2391	-4.8302	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360
 LOG-LIKELIHOOD (CYCLE 4) = -114.8308

-2*MAXIMIZED LOG-LIKELIHOOD= 229.6616

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	5.0048	2	0.0819	
LIKELIHOOD RATIO	5.0104	2	0.0817	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

 ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.050

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
0.50	SMOKE(2)	0.7041	0.3196	2.2027	0.0276	2.022	1.081	3.783	BASELINE
	CONSTANT	-1.0871	0.2147	-5.0623	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360
 LOG-LIKELIHOOD (CYCLE 4) = -114.9023

-2*MAXIMIZED LOG-LIKELIHOOD= 229.8046

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	4.9237	1	0.0265	
LIKELIHOOD RATIO	4.8674	1	0.0274	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 189
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Sunday, Jan 26, 1998 14:11:26.97 Page 7

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
0.50	PTL(2)	1.4626	0.4144	3.5291	0.0004	4.317	1.916	9.727	BASELINE
	CONSTANT	-1.0571	0.1813	-5.8312	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -110.9489

-2*MAXIMIZED LOG-LIKELIHOOD= 221.8978

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	13.7590	1	0.0002	
LIKELIHOOD RATIO	12.7742	1	0.0004	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.0000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	189
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.000

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Sunday, Jan 26, 1998 14:11:27.02 Page 8

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF. CATEG.
0.50	HT(2)	1.2135	0.6083	1.9948	0.0461	3.365	1.021	11.088	BASELINE
	CONSTANT	-0.8771	0.1650	-5.3150	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -115.3249

-2*MAXIMIZED LOG-LIKELIHOOD= 230.6499

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	4.3880	1	0.0362	
LIKELIHOOD RATIO	4.0221	1	0.0449	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.0000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	189
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.050

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Sunday, Jan 26, 1998 14:11:27.08 Page 9

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
0.50	UI (2)	0.9469	0.4168	2.2720	0.0231	2.578	1.139	5.835	BASELINE
	CONSTANT	-0.9469	0.1756	-5.3919	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -114.7979

-2*MAXIMIZED LOG-LIKELIHOOD= 229.5959

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	5.4008	1	0.0201	
LIKELIHOOD RATIO	5.0761	1	0.0243	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.0000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	189
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.060

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
0.50	FTV(2)	-0.4607	0.3240	-1.4219	0.1550	0.631	0.334	1.190	BASELINE
3.50	FTV(3)	-0.8109	1.1373	-0.7130	0.4758	0.444	0.048	4.129	BASELINE
	CONSTANT	-0.5754	0.2083	-2.7618	0.0057				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360
 LOG-LIKELIHOOD (CYCLE 4) = -116.1472

-2*MAXIMIZED LOG-LIKELIHOOD= 232.2944

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	2.3469	2	0.3093	
LIKELIHOOD RATIO	2.3776	2	0.3046	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

 ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.00000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.050

RESUMO DOS RESULTADOS DA ANÁLISE UNIVARIADA DA REGRESSÃO LOGÍSTICA

Variável	categoria	modelo $\ln\left(\frac{p}{1-p}\right) =$	\hat{p}	OR	IC _{95%} (OR)	valor de p (teste Wald)	ln L(p)	valor de p (teste χ^2)
AGE	contínua	0,3846-0,0512 (age)	?	0,95(Δ age)	[0,89 ; 1,01]?	0,1045	-115,9560	0,0966
	< 20		0,29	1,00			-116,1152	
	20 - 45	-0,8755+0,1164(age)	0,32	1,12	[0,56 ; 2,26]	0,7448		
LWT	contínua	0,9983-0,0141 (lwt)	?	0,99 (Δ lwt)	[0,97 ; 1,00]?	0,0227	-114,3453	0,0145
	< 131		0,37	1,00			-114,8075	0,0798
	131-150	-0,5500-0,6395(lwt1) -0,8713(lwt2)	0,23	0,53	[0,21 ; 1,33]	0,1741		
	151 e +		0,19	0,42	[0,17 ; 1,03]	0,0587		
RA CE	branco		0,24	1,00			-114,8308	0,0817
	preto	-1,1550+0,8448(race1) +0,6362 (race2)	0,42	2,33	[0,94 ; 5,77]	0,0683		
	outros		0,37	1,89	[0,96 ; 3,74]	0,0674		
SMO KE	não		0,25	1,00			-114,9023	0,0274
	sim	-1,0871+0,7041 (smoke)	0,41	2,02	[1,08 ; 3,78]	0,0276		
PTL	nenhum l ou +	-1,0571+1,4626 (ptl)	0,26 0,60	1,00 4,32	[1,92 ; 9,73]	0,0004	-110,9489	0,0004
HT	não sim	-0,8771+1,2135 (ht)	0,29 0,58	1,00 3,37	[1,02;11,09]	0,0461	-115,3249	0,0449
UI	não sim	-0,9469+0,9469 (ui)	0,28 0,50	1,00 2,58	[1,14 ; 5,84]	0,0231	-114,7979	0,0243
FTV	discreta	-0,6868-0,1351 (ftv)	?	0,87 (Δ ftv)	[0,64 ; 1,19]?	0,3885	-116,9494	0,3792
	0		0,36	1,00			-116,1472	0,3046
	1 - 3	-0,5754-0,4607(ftv1) -0,8109 (ftv2)	0,26	0,63	[0,33 ; 1,19]	0,1550		
	4 e +		0,20	0,44	[0,05 ; 4,13]	0,4758		

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:04:08.57 Page 4

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.3558	0.4219	3.2135	0.0013	3.880	1.697	8.871	BASELINE
0.50	UI(2)	0.7383	0.4382	1.6846	0.0921	2.092	0.886	4.939	BASELINE
	CONSTANT	-1.1580	0.1942	-5.9617	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -109.5602

-2*MAXIMIZED LOG-LIKELIHOOD= 219.1204

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	16.5285	2	0.0003	
LIKELIHOOD RATIO	15.5516	2	0.0004	
LIKELIHOOD RATIO	2.7773	1	0.0956	UI

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.110

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:04:40.37 Page 5

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
0.50	PTL(2)	1.2488	0.4292	2.9098	0.0036	3.486	1.503	8.085	BASELINE
0.50	UI(2)	0.7283	0.4422	1.6471	0.0995	2.072	0.871	4.929	BASELINE
0.50	SMOKE(2)	0.5280	0.3362	1.5704	0.1163	1.696	0.877	3.277	BASELINE
	CONSTANT	-1.3576	0.2389	-5.6833	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -108.3360

-2*MAXIMIZED LOG-LIKELIHOOD= 216.6720

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	18.8107	3	0.0003	
LIKELIHOOD RATIO	18.0000	3	0.0004	
LIKELIHOOD RATIO	2.4484	1	0.1176	SMOKE

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.110

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:05:06.84 Page 6

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
0.50	PTL(2)	1.2519	0.4339	2.8851	0.0039	3.497	1.494	8.186	BASELINE
0.50	UI(2)	0.8573	0.4474	1.9160	0.0554	2.357	0.981	5.665	BASELINE
0.50	SMOKE(2)	0.5282	0.3416	1.5464	0.1220	1.696	0.868	3.313	BASELINE
0.50	HT(2)	1.4153	0.6293	2.2489	0.0245	4.118	1.199	14.137	BASELINE
	CONSTANT	-1.4875	0.2520	-5.9037	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 4) = -105.7912

-2*MAXIMIZED LOG-LIKELIHOOD= 211.5825

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	23.8731	4	0.0001	
LIKELIHOOD RATIO	23.0895	4	0.0001	
LIKELIHOOD RATIO	5.0896	1	0.0241	HT

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.100

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:05:29.97 Page 7

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.2964	0.4448	2.9143	0.0036	3.656	1.529	8.743	BASELINE
0.50	UI(2)	0.7249	0.4581	1.5825	0.1135	2.065	0.841	5.067	BASELINE
0.50	SMOKE(2)	0.4912	0.3469	1.4161	0.1567	1.634	0.828	3.226	BASELINE
0.50	HT(2)	1.8582	0.6836	2.7184	0.0066	6.412	1.679	24.485	BASELINE
130.50	LWT(2)	-0.5962	0.5080	-1.1737	0.2405	0.551	0.204	1.491	BASELINE
150.50	LWT(3)	-1.1623	0.5398	-2.1534	0.0313	0.313	0.109	0.901	BASELINE
	CONSTANT	-1.2134	0.2760	-4.3964	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 5) = -102.8399

-2*MAXIMIZED LOG-LIKELIHOOD= 205.6798

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	28.5818	6	0.0001	
LIKELIHOOD RATIO	28.9922	6	0.0001	
LIKELIHOOD RATIO	5.9026	2	0.0523	LWT

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 189
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.110
  
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:06:19.95 Page 9

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.1905	0.4419	2.6939	0.0071	3.289	1.383	7.820	BASELINE
0.50	UI(2)	0.8394	0.4541	1.8486	0.0645	2.315	0.951	5.637	BASELINE
0.50	SMOKE(2)	0.9307	0.3917	2.3759	0.0175	2.536	1.177	5.466	BASELINE
0.50	HT(2)	1.3700	0.6428	2.1314	0.0331	3.935	1.116	13.871	BASELINE
1.50	RACE(2)	1.0606	0.5060	2.0961	0.0361	2.888	1.071	7.785	BASELINE
2.50	RACE(3)	1.0242	0.4241	2.4151	0.0157	2.785	1.213	6.394	BASELINE
	CONSTANT	-2.1915	0.3924	-5.5854	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 5) = -101.9079

-2*MAXIMIZED LOG-LIKELIHOOD= 203.8158

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	30.2229	6	0.0000	
LIKELIHOOD RATIO	30.8562	6	0.0000	
LIKELIHOOD RATIO	7.7666	2	0.0206	RACE

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.160

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:06:38.08 Page 10

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.2639	0.4530	2.7901	0.0053	3.539	1.456	8.600	BASELINE
0.50	UI(2)	0.7874	0.4590	1.7154	0.0863	2.198	0.894	5.404	BASELINE
0.50	SMOKE(2)	0.8979	0.4031	2.2275	0.0259	2.454	1.114	5.408	BASELINE
0.50	HT(2)	1.3177	0.6478	2.0342	0.0419	3.735	1.049	13.295	BASELINE
1.50	RACE(2)	1.0496	0.5105	2.0558	0.0398	2.856	1.050	7.770	BASELINE
2.50	RACE(3)	0.9960	0.4380	2.2739	0.0230	2.707	1.147	6.388	BASELINE
0.50	FTV(2)	-0.1803	0.3653	-0.4935	0.6217	0.835	0.408	1.709	BASELINE
3.50	FTV(3)	-0.9960	1.1999	-0.8301	0.4065	0.369	0.035	3.880	BASELINE
	CONSTANT	-2.0638	0.4576	-4.5097	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 5) = -101.4488

-2*MAXIMIZED LOG-LIKELIHOOD= 202.8975

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	31.0277	8	0.0001	
LIKELIHOOD RATIO	31.7745	8	0.0001	
LIKELIHOOD RATIO	0.9183	2	0.6318	FTV

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.160

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:07:16.30 Page 12

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.1721	0.4492	2.6094	0.0091	3.229	1.339	7.787	BASELINE
0.50	UI(2)	0.8437	0.4545	1.8563	0.0634	2.325	0.954	5.666	BASELINE
0.50	SMOKE(2)	0.9359	0.3920	2.3877	0.0170	2.549	1.183	5.496	BASELINE
0.50	HT(2)	1.3690	0.6431	2.1288	0.0333	3.931	1.115	13.866	BASELINE
1.50	RACE(2)	1.0677	0.5071	2.1054	0.0353	2.909	1.077	7.858	BASELINE
2.50	RACE(3)	1.0240	0.4233	2.4193	0.0156	2.784	1.215	6.383	BASELINE
19.50	AGE(2)	0.0865	0.3938	0.2198	0.8260	1.090	0.504	2.359	BASELINE
	CONSTANT	-2.2548	0.4874	-4.6258	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 5) = -101.8837

-2*MAXIMIZED LOG-LIKELIHOOD= 203.7674

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	30.3315	7	0.0001	
LIKELIHOOD RATIO	30.9046	7	0.0001	
LIKELIHOOD RATIO	0.0485	1	0.8257	AGE

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.110

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:08:21.06 Page 14

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.3059	0.4355	2.9988	0.0027	3.691	1.572	8.666	BASELINE
0.50	SMOKE(2)	0.9389	0.3874	2.4236	0.0154	2.557	1.197	5.464	BASELINE
0.50	HT(2)	1.2294	0.6394	1.9228	0.0545	3.419	0.976	11.973	BASELINE
1.50	RACE(2)	1.0297	0.5065	2.0328	0.0421	2.800	1.038	7.557	BASELINE
2.50	RACE(3)	1.0439	0.4176	2.4998	0.0124	2.840	1.253	6.439	BASELINE
	CONSTANT	-2.0657	0.3775	-5.4723	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360
 LOG-LIKELIHOOD (CYCLE 5) = -103.5823

-2*MAXIMIZED LOG-LIKELIHOOD= 207.1646

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	27.1807	5	0.0001	
LIKELIHOOD RATIO	27.5074	5	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

 ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.110

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Saturday, Jan 26, 1997 10:08:32.05 Page 15

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CAT.
0.50	PTL(2)	1.1905	0.4419	2.6939	0.0071	3.289	1.383	7.820	BASELINE
0.50	SMOKE(2)	0.9307	0.3917	2.3759	0.0175	2.536	1.177	5.466	BASELINE
0.50	HT(2)	1.3700	0.6428	2.1314	0.0331	3.935	1.116	13.871	BASELINE
1.50	RACE(2)	1.0606	0.5060	2.0961	0.0361	2.888	1.071	7.785	BASELINE
2.50	RACE(3)	1.0242	0.4241	2.4151	0.0157	2.785	1.213	6.394	BASELINE
0.50	UI(2)	0.8394	0.4541	1.8486	0.0645	2.315	0.951	5.637	BASELINE
	CONSTANT	-2.1915	0.3924	-5.5854	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -117.3360

LOG-LIKELIHOOD (CYCLE 5) = -101.9079

-2*MAXIMIZED LOG-LIKELIHOOD= 203.8158

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	30.2229	6	0.0000	
LIKELIHOOD RATIO	30.8562	6	0.0000	
LIKELIHOOD RATIO	3.3488	1	0.0673	UI

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
 TOLERANCE 0.0000010000
 CONVERGENCE 0.0000100000
 ITERATIONS 15
 CONFIDENCE LEVEL 95%
 RECORDS IN ANALYSIS 189
 ERROR OR WARNING MESSAGES ... NONE
 TIME (SECONDS) 0.110

ANÁLISE DOS RESÍDUOS DO MODELO FINAL DE LOW

----- Hosmer and Lemeshow Goodness-of-Fit Test-----

	LOW = 0		LOW = 1		
Group	Observed	Expected	Observed	Expected	Total
1	35.000	34.180	3.000	3.820	38.000
2	25.000	26.537	9.000	7.463	34.000
3	29.000	29.743	10.000	9.257	39.000
4	16.000	14.736	6.000	7.264	22.000
5	10.000	9.460	7.000	7.540	17.000
6	8.000	9.877	12.000	10.123	20.000
7	7.000	5.466	12.000	13.534	19.000
		Chi-Square	df	Significance	
Goodness-of-fit test		2.3862	5	.7935	

EXERCÍCIO 4

BANCO DE DADOS STA.DAT

Variable	Name	Codes/Values	Column Heading Appendix 2
1	Identification Code	ID Number	ID
2	Vital Status	0 = Lived 1 = Died	STA
3	Age	Years	AGE
4	Sex	0 = Male 1 = Female	SEX
5	Race	1 = White 2 = Black 3 = Other	RACE
6	Service at ICU Admission	0 = Medical 1 = Surgical	SER
7	Cancer Part of Present Problem	0 = No 1 = Yes	CAN
8	History of Chronic Renal Failure	0 = No 1 = Yes	CRN
9	Infection Probable at ICU Admission	0 = No 1 = Yes	INF
10	CPR Prior to ICU Admission	0 = No 1 = Yes	CPR
11	Systolic Blood Pressure at ICU Admission	mm Hg	SYS
12	Heart Rate at ICU Admission	Beats/min	HRA
13	Previous Admission to an ICU within 6 Months	0 = No 1 = Yes	PRE
14	Type of Admission	0 = Elective 1 = Emergency	TYP
15	Long Bone, Multiple, Neck, Single Area, or Hip Fracture	0 = No 1 = Yes	FRA
16	PO ₂ from Initial Blood Gases	0 = >60 1 = ≤ 60	PO ₂
17	PH from Initial Blood Gases	0 = ≥ 7.25 1 = < 7.25	PH
18	PCO ₂ from Initial Blood Gases	0 = ≤ 45 1 = > 45	PCO ₂
19	Bicarbonate from Initial Blood Gases	0 = ≥ 18 1 = < 18	BIC
20	Creatinine from Initial Blood Gases	0 = ≤ 2.0 1 = > 2.0	CRE
21	Level of Consciousness at ICU Admission	0 = No Coma or Stupor 1 = Deep Stupor 2 = Coma	LOC

CRUZAMENTOS DE STA COM AS VARIÁVEIS INDEPENDENTES

AGE	Freq	Percent	Cum.
16	2	1.0%	1.0%
17	3	1.5%	2.5%
18	4	2.0%	4.5%
19	4	2.0%	6.5%
20	5	2.5%	9.0%
21	3	1.5%	10.5%
23	4	2.0%	12.5%
24	1	0.5%	13.0%
25	1	0.5%	13.5%
27	1	0.5%	14.0%
28	1	0.5%	14.5%
30	1	0.5%	15.0%
31	1	0.5%	15.5%
32	2	1.0%	16.5%
34	1	0.5%	17.0%
35	2	1.0%	18.0%
36	1	0.5%	18.5%
40	4	2.0%	20.5%
41	3	1.5%	22.0%
42	1	0.5%	22.5%
45	2	1.0%	23.5%
46	3	1.5%	25.0%
47	3	1.5%	26.5%
48	3	1.5%	28.0%
49	3	1.5%	29.5%
50	3	1.5%	31.0%
51	2	1.0%	32.0%
52	1	0.5%	32.5%
53	3	1.5%	34.0%
54	2	1.0%	35.0%
55	8	4.0%	39.0%
57	2	1.0%	40.0%
58	2	1.0%	41.0%
59	3	1.5%	42.5%
60	7	3.5%	46.0%
61	4	2.0%	48.0%
62	2	1.0%	49.0%
63	5	2.5%	51.5%
64	6	3.0%	54.5%
65	4	2.0%	56.5%
66	5	2.5%	59.0%
67	5	2.5%	61.5%
68	6	3.0%	64.5%
69	7	3.5%	68.0%
70	6	3.0%	71.0%
71	6	3.0%	74.0%
72	5	2.5%	76.5%
73	4	2.0%	78.5%
74	2	1.0%	79.5%
75	8	4.0%	83.5%
76	4	2.0%	85.5%
77	6	3.0%	88.5%
78	4	2.0%	90.5%
79	1	0.5%	91.0%
80	3	1.5%	92.5%
82	2	1.0%	93.5%
83	1	0.5%	94.0%
84	1	0.5%	94.5%
85	1	0.5%	95.0%
87	2	1.0%	96.0%
88	4	2.0%	98.0%
89	1	0.5%	98.5%
91	2	1.0%	99.5%
92	1	0.5%	100.0%
Total	200	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
200	11509	57.545	402.189	20.055	1.418
Minimum	25%ile	Median	75%ile	Maximum	Mode
16.000	46.500	63.000	72.000	92.000	55.000

Student's "t", testing whether mean differs from zero.

SYS	Freq	Percent	Cum.
36	1	0.5%	0.5%
48	1	0.5%	1.0%
56	1	0.5%	1.5%
62	1	0.5%	2.0%
64	1	0.5%	2.5%
66	1	0.5%	3.0%
68	1	0.5%	3.5%
70	1	0.5%	4.0%
78	1	0.5%	4.5%
80	3	1.5%	6.0%
86	2	1.0%	7.0%
90	4	2.0%	9.0%
91	1	0.5%	9.5%
92	2	1.0%	10.5%
100	8	4.0%	14.5%
104	5	2.5%	17.0%
108	2	1.0%	18.0%
110	17	8.5%	26.5%
112	7	3.5%	30.0%
114	1	0.5%	30.5%
116	2	1.0%	31.5%
118	1	0.5%	32.0%
120	9	4.5%	36.5%
122	4	2.0%	38.5%
124	4	2.0%	40.5%
126	4	2.0%	42.5%
128	5	2.5%	45.0%
130	11	5.5%	50.5%
131	1	0.5%	51.0%
132	6	3.0%	54.0%
134	3	1.5%	55.5%
135	1	0.5%	56.0%
136	4	2.0%	58.0%
138	3	1.5%	59.5%
139	1	0.5%	60.0%
140	10	5.0%	65.0%
141	1	0.5%	65.5%
142	7	3.5%	69.0%
144	3	1.5%	70.5%
146	2	1.0%	71.5%
148	4	2.0%	73.5%
150	6	3.0%	76.5%
152	2	1.0%	77.5%
154	2	1.0%	78.5%
156	3	1.5%	80.0%
158	3	1.5%	81.5%
160	4	2.0%	83.5%
162	5	2.5%	86.0%
164	1	0.5%	86.5%
168	1	0.5%	87.0%
169	1	0.5%	87.5%
170	7	3.5%	91.0%
174	2	1.0%	92.0%
180	1	0.5%	92.5%
188	1	0.5%	93.0%
190	6	3.0%	96.0%
200	2	1.0%	97.0%
204	1	0.5%	97.5%
206	1	0.5%	98.0%
208	1	0.5%	98.5%
212	1	0.5%	99.0%
224	1	0.5%	99.5%
256	1	0.5%	100.0%
Total	200	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
200	26456	132.280	1085.841	32.952	2.330
Minimum	25%ile	Median	75%ile	Maximum	Mode
36.000	110.000	130.000	150.000	256.000	110.000

Student's "t", testing whether mean differs from zero.
T statistic = 56.771, df = 199 p-value = 0.00000

HRA	Freq	Percent	Cum.
39	1	0.5%	0.5%
44	1	0.5%	1.0%
46	1	0.5%	1.5%
48	1	0.5%	2.0%
52	2	1.0%	3.0%
55	1	0.5%	3.5%
58	1	0.5%	4.0%
59	1	0.5%	4.5%
60	6	3.0%	7.5%
62	1	0.5%	8.0%
64	3	1.5%	9.5%
65	2	1.0%	10.5%
66	2	1.0%	11.5%
67	1	0.5%	12.0%
68	2	1.0%	13.0%
70	4	2.0%	15.0%
71	1	0.5%	15.5%
72	1	0.5%	16.0%
73	1	0.5%	16.5%
74	1	0.5%	17.0%
75	1	0.5%	17.5%
76	2	1.0%	18.5%
78	4	2.0%	20.5%
79	2	1.0%	21.5%
80	9	4.5%	26.0%
81	3	1.5%	27.5%
83	3	1.5%	29.0%
84	3	1.5%	30.5%
85	2	1.0%	31.5%
86	6	3.0%	34.5%
87	1	0.5%	35.0%
88	9	4.5%	39.5%
89	2	1.0%	40.5%
90	6	3.0%	43.5%
91	1	0.5%	44.0%
92	6	3.0%	47.0%
94	2	1.0%	48.0%
95	3	1.5%	49.5%
96	6	3.0%	52.5%
98	2	1.0%	53.5%
99	4	2.0%	55.5%
100	9	4.5%	60.0%
103	3	1.5%	61.5%
104	1	0.5%	62.0%
105	1	0.5%	62.5%
106	3	1.5%	64.0%
107	1	0.5%	64.5%
108	2	1.0%	65.5%
109	1	0.5%	66.0%
110	3	1.5%	67.5%
111	1	0.5%	68.0%
112	6	3.0%	71.0%
114	3	1.5%	72.5%
115	2	1.0%	73.5%
116	1	0.5%	74.0%
118	2	1.0%	75.0%
119	1	0.5%	75.5%
120	7	3.5%	79.0%
121	1	0.5%	79.5%
122	2	1.0%	80.5%
124	4	2.0%	82.5%
125	4	2.0%	84.5%
126	1	0.5%	85.0%
128	3	1.5%	86.5%
131	1	0.5%	87.0%
132	2	1.0%	88.0%
135	2	1.0%	89.0%
136	2	1.0%	90.0%
137	1	0.5%	90.5%
138	1	0.5%	91.0%
140	6	3.0%	94.0%
143	1	0.5%	94.5%
144	1	0.5%	95.0%
145	2	1.0%	96.0%

150		2	1.0%	97.0%
153		1	0.5%	97.5%
154		1	0.5%	98.0%
160		1	0.5%	98.5%
162		1	0.5%	99.0%
170		1	0.5%	99.5%
192		1	0.5%	100.0%

Total		200	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
200	19785	98.925	719.829	26.830	1.897
Minimum	25%ile	Median	75%ile	Maximum	Mode
39.000	80.000	96.000	118.500	192.000	80.000

Student's "t", testing whether mean differs from zero.
 T statistic = 52.144, df = 199 p-value = 0.00000

AGE	STA		
	0	1	Total
16	2	0	2
17	3	0	3
18	4	0	4
19	3	1	4
20	4	1	5
21	3	0	3
23	4	0	4
24	1	0	1
25	1	0	1
27	1	0	1
28	1	0	1
30	1	0	1
31	1	0	1
32	2	0	2
34	1	0	1
35	2	0	2
36	1	0	1
40	3	1	4
41	2	1	3
42	1	0	1
45	2	0	2
46	3	0	3
47	3	0	3
48	3	0	3
49	2	1	3
50	1	2	3
51	1	1	2
52	1	0	1
53	2	1	3
54	2	0	2
55	7	1	8
57	1	1	2
58	2	0	2
59	3	0	3
60	5	2	7
61	3	1	4
62	2	0	2
63	3	2	5
64	5	1	6
65	2	2	4
66	5	0	5
67	4	1	5
68	6	0	6
69	5	2	7
70	5	1	6
71	4	2	6
72	4	1	5
73	4	0	4
74	2	0	2
75	3	5	8
76	3	1	4
77	6	0	6
78	2	2	4

79		1	0		1
80		2	1		3
82		2	0		2
83		1	0		1
84		1	0		1
85		0	1		1
87		1	1		2
88		3	1		4
89		1	0		1
91		1	1		2
92		0	1		1

Total		160	40		200

		STA				
SEX		0	1	Total		

	0		100	24		124
	1		60	16		76

Total		160	40		200	

Single Table Analysis

Odds ratio
 Cornfield 95% confidence limits for OR 0.51 < OR < 2.40
 Maximum likelihood estimate of OR (MLE) 1.11
 Exact 95% confidence limits for MLE 0.51 < OR < 2.38
 Exact 95% Mid-P limits for MLE 0.54 < OR < 2.26
 Probability of MLE >= 1.11 if population OR = 1.0 0.45309582

RISK RATIO(RR) (Outcome:STA=0; Exposure:SEX=0) 1.02
 95% confidence limits for RR 0.88 < RR < 1.18

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	0.08	0.77077732
Mantel-Haenszel:	0.08	0.77133511
Yates corrected:	0.01	0.91299679

		STA				
AGE1		0	1	Total		

	0		79	13		92
	1		81	27		108

Total		160	40		200	

Single Table Analysis

Odds ratio
 Cornfield 95% confidence limits for OR 0.92 < OR < 4.52
 Maximum likelihood estimate of OR (MLE) 2.02
 Exact 95% confidence limits for MLE 0.93 < OR < 4.59
 Exact 95% Mid-P limits for MLE 0.98 < OR < 4.31
 Probability of MLE >= 2.02 if population OR = 1.0 0.04016231

RISK RATIO(RR) (Outcome:STA=0; Exposure:AGE1=0) 1.14
 95% confidence limits for RR 1.00 < RR < 1.31

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	3.67	0.05545079
Mantel-Haenszel:	3.65	0.05606464
Yates corrected:	3.02	0.08221397

RACE	STA		
	0	1	Total
1	138	37	175
2	14	1	15
3	8	2	10
Total	160	40	200

An expected value is < 5. Chi square not valid.
 Chi square = 1.81
 Degrees of freedom = 2
 p value = 0.40463822

SER	STA		
	0	1	Total
0	67	26	93
1	93	14	107
Total	160	40	200

Single Table Analysis

Odds ratio 0.39
 Cornfield 95% confidence limits for OR 0.18 < OR < 0.85
 Maximum likelihood estimate of OR (MLE) 0.39
 Exact 95% confidence limits for MLE 0.17 < OR < 0.84
 Exact 95% Mid-P limits for MLE 0.19 < OR < 0.80
 Probability of MLE <= 0.39 if population OR = 1.0 0.00714913

RISK RATIO (RR) (Outcome:STA=0; Exposure:SER=0) 0.83
 95% confidence limits for RR 0.72 < RR < 0.96

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	6.88	0.00872287 <---
Mantel-Haenszel:	6.84	0.00889239 <---
Yates corrected:	5.98	0.01446445 <---

CAN	STA		
	0	1	Total
0	144	36	180
1	16	4	20
Total	160	40	200

Single Table Analysis

Odds ratio 1.00
 Cornfield 95% confidence limits for OR 0.26 < OR < 3.50
 Maximum likelihood estimate of OR (MLE) 1.00
 Exact 95% confidence limits for MLE 0.23 < OR < 3.36
 Exact 95% Mid-P limits for MLE 0.27 < OR < 3.04
 Probability of MLE >= 1.00 if population OR = 1.0 0.59782160

RISK RATIO (RR) (Outcome:STA=0; Exposure:CAN=0) 1.00
 95% confidence limits for RR 0.79 < RR < 1.26

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	0.00	1.00000000
Mantel-Haenszel:	0.00	1.00000000
Yates corrected:	0.09	0.76827820

Fisher exact: 1-tailed P-value: 0.5978216
 2-tailed P-value: 1.0000000

An expected value is less than 5; recommend Fisher exact results.

CRN	STA		Total
	0	1	
0	149	32	181
1	11	8	19
Total	160	40	200

Single Table Analysis

Odds ratio 3.39
 Cornfield 95% confidence limits for OR 1.12 < OR < 10.13
 Maximum likelihood estimate of OR (MLE) 3.36
 Exact 95% confidence limits for MLE 1.08 < OR < 10.04
 Exact 95% Mid-P limits for MLE 1.20 < OR < 9.13
 Probability of MLE \geq 3.36 if population OR = 1.0 0.01771068

RISK RATIO(RR) (Outcome:STA=0; Exposure:CRN=0) 1.42
 95% confidence limits for RR 0.96 < RR < 2.10

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	6.41	0.01133678 <---
Mantel-Haenszel:	6.38	0.01154337 <---
Yates corrected:	4.98	0.02570119 <---
Fisher exact:	1-tailed P-value: 0.0177107 <---	2-tailed P-value: 0.0291629 <---

An expected value is less than 5; recommend Fisher exact results.

INF	STA		Total
	0	1	
0	100	16	116
1	60	24	84
Total	160	40	200

Single Table Analysis

Odds ratio 2.50
 Cornfield 95% confidence limits for OR 1.16 < OR < 5.44
 Maximum likelihood estimate of OR (MLE) 2.49
 Exact 95% confidence limits for MLE 1.16 < OR < 5.45
 Exact 95% Mid-P limits for MLE 1.23 < OR < 5.15
 Probability of MLE \geq 2.49 if population OR = 1.0 0.00846696

RISK RATIO(RR) (Outcome:STA=0; Exposure:INF=0) 1.21
 95% confidence limits for RR 1.04 < RR < 1.41

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	6.65	0.00991421 <---
Mantel-Haenszel:	6.62	0.01010101 <---
Yates corrected:	5.76	0.01640747 <---

CPR	STA		Total
	0	1	
0	154	33	187
1	6	7	13
Total	160	40	200

Single Table Analysis

Odds ratio 5.44
 Cornfield 95% confidence limits for OR 1.50 < OR < 20.05*
 *May be inaccurate
 Maximum likelihood estimate of OR (MLE) 5.38
 Exact 95% confidence limits for MLE 1.45 < OR < 20.76
 Exact 95% Mid-P limits for MLE 1.64 < OR < 18.09
 Probability of MLE \geq 5.38 if population OR = 1.0 0.00527584

RISK RATIO (RR) (Outcome:STA=0; Exposure:CPR=0) 1.78
 95% confidence limits for RR 0.99 < RR < 3.22

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	9.95	0.00160435 <---
Mantel-Haenszel:	9.90	0.00164832 <---
Yates corrected:	7.82	0.00516467 <---
Fisher exact:	1-tailed P-value: 0.0052758 <---	2-tailed P-value: 0.0052758 <---

An expected value is less than 5; recommend Fisher exact results.

SYS	STA		Total
	0	1	
36	0	1	1
48	1	0	1
56	0	1	1
62	0	1	1
64	0	1	1
66	0	1	1
68	1	0	1
70	0	1	1
78	1	0	1
80	0	3	3
86	1	1	2
90	2	2	4
91	1	0	1
92	2	0	2
100	7	1	8
104	4	1	5
108	2	0	2
110	15	2	17
112	6	1	7
114	1	0	1
116	2	0	2
118	1	0	1
120	8	1	9
122	3	1	4
124	3	1	4
126	4	0	4
128	4	1	5
130	7	4	11
131	1	0	1
132	6	0	6
134	2	1	3
135	1	0	1
136	3	1	4
138	3	0	3
139	1	0	1
140	6	4	10
141	0	1	1

142		6	1		7
144		3	0		3
146		2	0		2
148		2	2		4
150		5	1		6
152		2	0		2
154		2	0		2
156		3	0		3
158		3	0		3
160		4	0		4
162		5	0		5
164		1	0		1
168		0	1		1
169		1	0		1
170		6	1		7
174		2	0		2
180		1	0		1
188		1	0		1
190		5	1		6
200		2	0		2
204		1	0		1
206		1	0		1
208		1	0		1
212		1	0		1
224		1	0		1
256		0	1		1
-----+-----+-----					
Total		160	40		200

		STA			
SYS1		0	1	Total	
-----+-----+-----					
0		55	18		73
1		105	22		127
-----+-----+-----					
Total		160	40		200

Single Table Analysis

Odds ratio 0.64
 Cornfield 95% confidence limits for OR 0.30 < OR < 1.38
 Maximum likelihood estimate of OR (MLE) 0.64
 Exact 95% confidence limits for MLE 0.30 < OR < 1.39
 Exact 95% Mid-P limits for MLE 0.32 < OR < 1.31
 Probability of MLE <= 0.64 if population OR = 1.0 0.14368240

RISK RATIO(RR) (Outcome:STA=0; Exposure:SYS1=0) 0.91
 95% confidence limits for RR 0.78 < RR < 1.06

Ignore risk ratio if case control study

	Chi-Squares	P-values
	-----	-----
Uncorrected:	1.56	0.21186686
Mantel-Haenszel:	1.55	0.21301287
Yates corrected:	1.13	0.28694240

		STA			
HRA		0	1	Total	
-----+-----+-----					
39		1	0		1
44		1	0		1
46		1	0		1
48		1	0		1
52		2	0		2
55		0	1		1
58		0	1		1
59		1	0		1

60		5		1		6
62		1		0		1
64		2		1		3
65		2		0		2
66		1		1		2
67		1		0		1
68		2		0		2
70		4		0		4
71		1		0		1
72		0		1		1
73		1		0		1
74		1		0		1
75		1		0		1
76		1		1		2
78		4		0		4
79		2		0		2
80		7		2		9
81		0		3		3
83		3		0		3
84		3		0		3
85		1		1		2
86		5		1		6
87		1		0		1
88		9		0		9
89		2		0		2
90		5		1		6
91		1		0		1
92		6		0		6
94		0		2		2
95		2		1		3
96		3		3		6
98		2		0		2
99		4		0		4
100		6		3		9
103		3		0		3
104		1		0		1
105		1		0		1
106		2		1		3
107		1		0		1
108		1		1		2
109		1		0		1
110		3		0		3
111		1		0		1
112		5		1		6
114		2		1		3
115		2		0		2
116		1		0		1
118		1		1		2
119		0		1		1
120		7		0		7
121		1		0		1
122		1		1		2
124		3		1		4
125		3		1		4
126		1		0		1
128		2		1		3
131		1		0		1
132		1		1		2
135		2		0		2
136		1		1		2
137		1		0		1
138		1		0		1
140		5		1		6
143		1		0		1
144		1		0		1
145		1		1		2
150		1		1		2
153		1		0		1
154		1		0		1
160		0		1		1
162		1		0		1
170		1		0		1
192		1		0		1

Total		160		40		200

An expected value is < 5. Chi square not valid.
 Chi square = 80.90
 Degrees of freedom = 80
 p value = 0.00000000 <---

HRA1	STA		Total
	0	1	
0	43	9	52
1	117	31	148
Total	160	40	200

Single Table Analysis

Odds ratio 1.27
 Cornfield 95% confidence limits for OR 0.52 < OR < 3.15
 Maximum likelihood estimate of OR (MLE) 1.26
 Exact 95% confidence limits for MLE 0.53 < OR < 3.27
 Exact 95% Mid-P limits for MLE 0.57 < OR < 3.01
 Probability of MLE >= 1.26 if population OR = 1.0 0.36511393

RISK RATIO(RR) (Outcome:STA=0; Exposure:HRA1=0) 1.05
 95% confidence limits for RR 0.90 < RR < 1.21

Ignore risk ratio if case control study

	Chi-Squares	P-values
	-----	-----
Uncorrected:	0.32	0.57260262
Mantel-Haenszel:	0.32	0.57356405
Yates corrected:	0.13	0.71681812

PRE	STA		Total
	0	1	
0	137	33	170
1	23	7	30
Total	160	40	200

Single Table Analysis

Odds ratio 1.26
 Cornfield 95% confidence limits for OR 0.45 < OR < 3.47
 Maximum likelihood estimate of OR (MLE) 1.26
 Exact 95% confidence limits for MLE 0.42 < OR < 3.38
 Exact 95% Mid-P limits for MLE 0.47 < OR < 3.13
 Probability of MLE >= 1.26 if population OR = 1.0 0.38976175

RISK RATIO(RR) (Outcome:STA=0; Exposure:PRE=0) 1.05
 95% confidence limits for RR 0.85 < RR < 1.30

Ignore risk ratio if case control study

	Chi-Squares	P-values
	-----	-----
Uncorrected:	0.25	0.62054805
Mantel-Haenszel:	0.24	0.62142304
Yates corrected:	0.06	0.80449275

TYP	STA		Total
	0	1	
0	51	2	53
1	109	38	147
Total	160	40	200

Single Table Analysis

Odds ratio 8.89
 Cornfield 95% confidence limits for OR 1.96 < OR < 56.21*
 *May be inaccurate
 Maximum likelihood estimate of OR (MLE) 8.83
 Exact 95% confidence limits for MLE 2.13 < OR < 78.40
 Exact 95% Mid-P limits for MLE 2.39 < OR < 56.27
 Probability of MLE \geq 8.83 if population OR = 1.0 0.00017110

RISK RATIO (RR) (Outcome:STA=0; Exposure:TYP=0) 1.30
 95% confidence limits for RR 1.16 < RR < 1.45

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	11.87	0.00057160 <---
Mantel-Haenszel:	11.81	0.00059011 <---
Yates corrected:	10.53	0.00117670 <---

FRA	STA		Total
	0	1	
0	148	37	185
1	12	3	15
Total	160	40	200

Single Table Analysis

Odds ratio 1.00
 Cornfield 95% confidence limits for OR 0.21 < OR < 4.14
 Maximum likelihood estimate of OR (MLE) 1.00
 Exact 95% confidence limits for MLE 0.17 < OR < 3.97
 Exact 95% Mid-P limits for MLE 0.22 < OR < 3.52
 Probability of MLE \geq 1.00 if population OR = 1.0 0.60981331

RISK RATIO (RR) (Outcome:STA=0; Exposure:FRA=0) 1.00
 95% confidence limits for RR 0.77 < RR < 1.30

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	0.00	1.00000000
Mantel-Haenszel:	0.00	1.00000000
Yates corrected:	0.11	0.73718910

Fisher exact: 1-tailed P-value: 0.6098133
 2-tailed P-value: 1.0000000

An expected value is less than 5; recommend Fisher exact results.

PO2	STA		Total
	0	1	
0	149	35	184
1	11	5	16
Total	160	40	200

Single Table Analysis

Odds ratio 1.94
 Cornfield 95% confidence limits for OR 0.54 < OR < 6.63
 Maximum likelihood estimate of OR (MLE) 1.93
 Exact 95% confidence limits for MLE 0.49 < OR < 6.51
 Exact 95% Mid-P limits for MLE 0.57 < OR < 5.85
 Probability of MLE >= 1.93 if population OR = 1.0 0.19375585

RISK RATIO(RR) (Outcome:STA=0; Exposure:PO2=0) 1.18
 95% confidence limits for RR 0.84 < RR < 1.65

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	1.38	0.24083848
Mantel-Haenszel:	1.37	0.24201800
Yates corrected:	0.72	0.39694507
Fisher exact:	1-tailed P-value: 0.1937558	
	2-tailed P-value: 0.3236961	

An expected value is less than 5; recommend Fisher exact results.

PH	STA		Total
	0	1	
0	151	36	187
1	9	4	13
Total	160	40	200

Single Table Analysis

Odds ratio 1.86
 Cornfield 95% confidence limits for OR 0.45 < OR < 7.23
 Maximum likelihood estimate of OR (MLE) 1.86
 Exact 95% confidence limits for MLE 0.40 < OR < 7.13
 Exact 95% Mid-P limits for MLE 0.47 < OR < 6.30
 Probability of MLE >= 1.86 if population OR = 1.0 0.24778947

RISK RATIO(RR) (Outcome:STA=0; Exposure:PH=0) 1.17
 95% confidence limits for RR 0.81 < RR < 1.69

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	1.01	0.31542670
Mantel-Haenszel:	1.00	0.31663957
Yates corrected:	0.42	0.51869104
Fisher exact:	1-tailed P-value: 0.2477895	
	2-tailed P-value: 0.2974178	

An expected value is less than 5; recommend Fisher exact results.

PCO	STA		
	0	1	Total
0	144	36	180
1	16	4	20
Total	160	40	200

Single Table Analysis

Odds ratio 1.00
 Cornfield 95% confidence limits for OR 0.26 < OR < 3.50
 Maximum likelihood estimate of OR (MLE) 1.00
 Exact 95% confidence limits for MLE 0.23 < OR < 3.36
 Exact 95% Mid-P limits for MLE 0.27 < OR < 3.04
 Probability of MLE >= 1.00 if population OR = 1.0 0.59782160

RISK RATIO(RR) (Outcome:STA=0; Exposure:PCO=0) 1.00
 95% confidence limits for RR 0.79 < RR < 1.26

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	0.00	1.00000000
Mantel-Haenszel:	0.00	1.00000000
Yates corrected:	0.09	0.76827820
Fisher exact:	1-tailed P-value: 0.5978216	
	2-tailed P-value: 1.00000000	

An expected value is less than 5; recommend Fisher exact results.

BIC	STA		
	0	1	Total
0	150	35	185
1	10	5	15
Total	160	40	200

Single Table Analysis

Odds ratio 2.14
 Cornfield 95% confidence limits for OR 0.59 < OR < 7.49
 Maximum likelihood estimate of OR (MLE) 2.13
 Exact 95% confidence limits for MLE 0.54 < OR < 7.39
 Exact 95% Mid-P limits for MLE 0.62 < OR < 6.61
 Probability of MLE >= 2.13 if population OR = 1.0 0.15605936

RISK RATIO(RR) (Outcome:STA=0; Exposure:BIC=0) 1.22
 95% confidence limits for RR 0.84 < RR < 1.75

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	1.80	0.17949482
Mantel-Haenszel:	1.79	0.18058626
Yates corrected:	1.01	0.31406258
Fisher exact:	1-tailed P-value: 0.1560594	
	2-tailed P-value: 0.1866822	

An expected value is less than 5; recommend Fisher exact results.

CRE	STA		Total
	0	1	
0	155	35	190
1	5	5	10
Total	160	40	200

Single Table Analysis

Odds ratio 4.43
 Cornfield 95% confidence limits for OR 1.03 < OR < 19.14*
 *May be inaccurate
 Maximum likelihood estimate of OR (MLE) 4.38
 Exact 95% confidence limits for MLE 0.95 < OR < 20.18
 Exact 95% Mid-P limits for MLE 1.12 < OR < 17.13
 Probability of MLE \geq 4.38 if population OR = 1.0 0.02914166

RISK RATIO(RR) (Outcome:STA=0; Exposure:CRE=0) 1.63
 95% confidence limits for RR 0.87 < RR < 3.04

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	5.92	0.01496102 <---
Mantel-Haenszel:	5.89	0.01521459 <---
Yates corrected:	4.11	0.04258396 <---
Fisher exact: 1-tailed P-value:		0.0291417 <---
2-tailed P-value:		0.0291417 <---

An expected value is less than 5; recommend Fisher exact results.

LOC	STA		Total
	0	1	
0	158	27	185
1	0	5	5
2	2	8	10
Total	160	40	200

An expected value is < 5. Chi square not valid.
 Chi square = 45.88
 Degrees of freedom = 2
 p value = 0.00000000 <---

LOC1	STA		Total
	0	1	
0	158	27	185
1	2	13	15
Total	160	40	200

Single Table Analysis

Odds ratio 38.04
 Cornfield 95% confidence limits for OR 7.40 < OR < 263.20*
 *May be inaccurate
 Maximum likelihood estimate of OR (MLE) 36.96
 Exact 95% confidence limits for MLE 7.74 < OR < 355.37
 Exact 95% Mid-P limits for MLE 8.86 < OR < 253.36
 Probability of MLE \geq 36.96 if population OR = 1.0 0.00000001

RISK RATIO(RR) (Outcome:STA=0; Exposure:LOC1=0) 6.41
 95% confidence limits for RR 1.76 < RR < 23.31

Ignore risk ratio if case control study

	Chi-Squares	P-values
Uncorrected:	45.05	0.00000000 <---
Mantel-Haenszel:	44.82	0.00000000 <---
Yates corrected:	40.65	0.00000000 <---
Fisher exact: 1-tailed P-value:		0.00000000 <---
2-tailed P-value:		0.00000000 <---

An expected value is less than 5; recommend Fisher exact results.

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.69 Page 1

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	SEX	0.1054	0.3617	0.2913	0.7708	1.111	0.547	2.258	
	CONSTANT	-1.4271	0.2273	-6.2785	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 3) = -100.0382

-2*MAXIMIZED LOG-LIKELIHOOD= 200.0765

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	0.0849	1	0.7708	
LIKELIHOOD RATIO	0.0845	1	0.7713	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.75 Page 2

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
1.50	RACE (2)	-1.3227	1.0515	-1.2579	0.2084	0.266	0.034	2.092	BASELINE
2.50	RACE (3)	-0.0700	0.8120	-0.0862	0.9313	0.932	0.190	4.579	BASELINE
	CONSTANT	-1.3163	0.1851	-7.1103	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 5) = -98.9505

-2*MAXIMIZED LOG-LIKELIHOOD= 197.9011

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	1.8095	2	0.4046	
LIKELIHOOD RATIO	2.2599	2	0.3231	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.75 Page 3

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	SER	-0.9470	0.3682	-2.5719	0.0101	0.388	0.189	0.798	
	CONSTANT	-0.9466	0.2311	-4.0968	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -96.6210

-2*MAXIMIZED LOG-LIKELIHOOD= 193.2419

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	6.8786	1	0.0087	
LIKELIHOOD RATIO	6.9190	1	0.0085	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.00000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	200
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.000

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.80 Page 4

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	CAN	0.0000	0.5893	0.0000	1.0000	1.000	0.315	3.174	
	CONSTANT	-1.3863	0.1863	-7.4396	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 1) = -100.0805

-2*MAXIMIZED LOG-LIKELIHOOD= 200.1610

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	0.0000	1	1.0000	
LIKELIHOOD RATIO	0.0000	1	1.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

UNCONDITIONAL
ANALYSIS (LIKELIHOOD).....
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.80 Page 5

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	CRN	1.2198	0.5039	2.4208	0.0155	3.386	1.261	9.091	
	CONSTANT	-1.5382	0.1948	-7.8949	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -97.3684

-2*MAXIMIZED LOG-LIKELIHOOD= 194.7367

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	6.4118	1	0.0113	
LIKELIHOOD RATIO	5.4242	1	0.0199	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

UNCONDITIONAL
ANALYSIS (LIKELIHOOD).....
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.86 Page 6

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	INF	0.9163	0.3617	2.5332	0.0113	2.500	1.230	5.080	
	CONSTANT	-1.8326	0.2693	-6.8061	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -96.7927

-2*MAXIMIZED LOG-LIKELIHOOD= 193.5853

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	6.6503	1	0.0099	
LIKELIHOOD RATIO	6.5756	1	0.0103	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.86 Page 7

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	CPR	1.6946	0.5885	2.8796	0.0040	5.444	1.718	17.254	
	CONSTANT	-1.5404	0.1918	-8.0305	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 5) = -96.1143

-2*MAXIMIZED LOG-LIKELIHOOD= 192.2285

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	9.9548	1	0.0016	
LIKELIHOOD RATIO	7.9324	1	0.0049	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.91 Page 8

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	PRE	0.2339	0.4732	0.4942	0.6211	1.264	0.500	3.194	
	CONSTANT	-1.4235	0.1939	-7.3408	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 4) = -99.9618

-2*MAXIMIZED LOG-LIKELIHOOD= 199.9236

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	0.2451	1	0.6205	
LIKELIHOOD RATIO	0.2374	1	0.6261	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.0000010000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	200
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.050

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.91 Page 9

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	TYP	2.1849	0.7450	2.9326	0.0034	8.890	2.064	38.291	
	CONSTANT	-3.2387	0.7208	-4.4929	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 6) = -92.5245

-2*MAXIMIZED LOG-LIKELIHOOD= 185.0489

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	11.8664	1	0.0006	
LIKELIHOOD RATIO	15.1120	1	0.0001	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.00000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	200
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.000

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.97 Page 10

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	FRA	0.0000	0.6712	0.0000	1.0000	1.000	0.268	3.726	
	CONSTANT	-1.3863	0.1838	-7.5423	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

-2*MAXIMIZED LOG-LIKELIHOOD= 200.1610

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	0.0000	1	1.0000	
LIKELIHOOD RATIO	0.0000	1	1.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
  
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:48.97 Page 11

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	PO2	0.6601	0.5711	1.1558	0.2477	1.935	0.632	5.927	
	CONSTANT	-1.4486	0.1878	-7.7120	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -99.4604

-2*MAXIMIZED LOG-LIKELIHOOD= 198.9208

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	1.3757	1	0.2408	
LIKELIHOOD RATIO	1.2402	1	0.2654	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.02 Page 12

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	PH	0.6228	0.6289	0.9904	0.3220	1.864	0.543	6.395	
	CONSTANT	-1.4338	0.1855	-7.7303	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -99.6255

-2*MAXIMIZED LOG-LIKELIHOOD= 199.2510

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	1.0078	1	0.3154	
LIKELIHOOD RATIO	0.9099	1	0.3401	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.02 Page 13

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	PCO	0.0000	0.5893	0.0000	1.0000	1.000	0.315	3.174	
	CONSTANT	-1.3863	0.1863	-7.4396	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 1) = -100.0805

-2*MAXIMIZED LOG-LIKELIHOOD= 200.1610

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	0.0000	1	1.0000	
LIKELIHOOD RATIO	0.0000	1	1.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.02 Page 14

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	BIC	0.7621	0.5790	1.3163	0.1881	2.143	0.689	6.666	
	CONSTANT	-1.4553	0.1877	-7.7525	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -99.2811

-2*MAXIMIZED LOG-LIKELIHOOD= 198.5621

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	1.8018	1	0.1795	
LIKELIHOOD RATIO	1.5988	1	0.2061	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.00000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	200
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.000

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.08 Page 15

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	CRE	1.4881	0.6596	2.2562	0.0241	4.429	1.216	16.132	
	CONSTANT	-1.4881	0.1871	-7.9515	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -97.6980

-2*MAXIMIZED LOG-LIKELIHOOD= 195.3959

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	5.9211	1	0.0150	
LIKELIHOOD RATIO	4.7650	1	0.0290	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.08 Page 16

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	AGE1	0.7059	0.3728	1.8936	0.0583	2.026	0.976	4.206	
	CONSTANT	-1.8045	0.2993	-6.0290	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -98.2060

-2*MAXIMIZED LOG-LIKELIHOOD= 196.4120

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	3.6685	1	0.0554	
LIKELIHOOD RATIO	3.7489	1	0.0528	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.13 Page 17

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	HRA1	0.2358	0.4185	0.5634	0.5732	1.266	0.557	2.875	
	CONSTANT	-1.5640	0.3666	-4.2666	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -99.9175

-2*MAXIMIZED LOG-LIKELIHOOD= 199.8350

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	0.3184	1	0.5726	
LIKELIHOOD RATIO	0.3259	1	0.5681	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.19 Page 18

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	LOC1	3.6386	0.7876	4.6199	0.0000	38.037	8.125	178.079	
	CONSTANT	-1.7668	0.2082	-8.4840	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -82.7783

-2*MAXIMIZED LOG-LIKELIHOOD= 165.5567

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	45.0451	1	0.0000	
LIKELIHOOD RATIO	34.6043	1	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:12:49.19 Page 19

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	SYS1	-0.4460	0.3588	-1.2430	0.2139	0.640	0.317	1.293	
	CONSTANT	-1.1170	0.2715	-4.1133	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 4) = -99.3165

-2*MAXIMIZED LOG-LIKELIHOOD= 198.6330

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	1.5586	1	0.2119	
LIKELIHOOD RATIO	1.5279	1	0.2164	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.000
    
```

Variável	categoria	modelo $\ln\left(\frac{p}{1-p}\right) =$	\hat{p}	\hat{OR}	IC _{95%} (OR)	valor de p (teste Wald)	ln L(p)	valor de p (teste χ^2)
AGE	até 60 61 e +	-1,8045+0,7059 (age)	0,14 0,25	1,00 2,03	[0,98 ; 4,21]	0,0583	-98,2060	0,0528
SEX	masc. fem.	-1,4271+0,1054 (sex)	0,19 0,21	1,00 1,11	[0,55 ; 2,26]	0,7708	-100,0382	0,7713
RA CE	branco preto outros	-1,3163-1,3227(race1) -0,0700 (race2)	0,21 0,07 0,20	1,00 0,27 0,93	[0,03 ; 2,09] [0,19 ; 4,58]	0,2084 0,9313	-98,9505	0,3231
SER	médica cirúrgica	-0,9466-0,9470(ser)	0,28 0,13	1,00 0,39	[0,19 ; 0,80]	0,0101	-96,6210	0,0085
CAN	não sim	-1,3863+0,0000 (can)	0,20 0,20	1,00 1,00	[0,32 ; 3,17]	1,0000	-100,0805	1,0000
CRN	não sim	-1,5382+1,2198 (crn)	0,18 0,42	1,00 3,39	[1,26 ; 9,09]	0,0155	-97,3684	0,0199
INF	não sim	-1,8326+0,9163 (inf)	0,14 0,29	1,00 2,50	[1,23 ; 5,08]	0,0113	-96,7927	0,0103
CPR	não sim	-1,5404+1,6946 (cpr)	0,18 0,54	1,00 5,44	[1,72; 17,25]	0,0040	-96,1143	0,0049
SYS	até 120 121 e +	-1,1170-0,4460 (sys)	0,25 0,17	1,00 0,64	[0,32 ; 1,29]	0,2139	-99,3165	0,2164
HRA	até 80 81 e +	-1,5640+0,2358 (hra)	0,17 0,21	1,00 1,27	[0,56 ; 2,88]	0,5732	-99,9175	0,5681
PRE	não sim	-1,4235+0,2339 (pre)	0,19 0,23	1,00 1,26	[0,50 ; 3,19]	0,6211	-99,9618	0,6261
TYP	eletiva emergência	-3,2387+2,1849 (typ)	0,04 0,26	1,00 8,89	[2,06 ; 38,29]	0,0034	-92,5245	0,0001
FRA	não sim	-1,3863+0,0000 (fra)	0,20 0,20	1,00 1,00	[0,27 ; 3,73]	1,0000	-100,0805	1,0000
PO2	>60 até 60	-1,4486+0,6601 (po2)	0,19 0,31	1,00 1,94	[0,63 ; 5,93]	0,2477	-99,4604	0,2654
PH	$\geq 7,25$ $< 7,25$	-1,4338+0,6228 (ph)	0,19 0,31	1,00 1,86	[0,54 ; 6,40]	0,3220	-99,6255	0,3401
PCO	≤ 45 >45	-1,3863+0,0000 (pco)	0,20 0,20	1,00 1,00	[0,32 ; 3,17]	1,0000	-100,0805	1,0000
BIC	≥ 18 < 18	-1,4553+0,7621 (bic)	0,19 0,33	1,00 2,14	[0,69 ; 6,67]	0,1881	-99,2811	0,2061
CRE	$\leq 2,0$ > 2,0	-1,4881+1,4881 (cre)	0,18 0,50	1,00 4,43	[1,22 ; 16,13]	0,0241	-97,6980	0,0290
LOC	não c/e (estupor p+coma)	-1,7668+3,6386 (loc)	0,15 0,87	1,00 38,04	[8,13; 178,08]	0,0000	-82,7783	0,0000

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:47:55.69 Page 1

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.6386	0.7876	4.6199	0.0000	38.037	8.125	178.079	
	CONSTANT	-1.7668	0.2082	-8.4840	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 6) = -82.7783

-2*MAXIMIZED LOG-LIKELIHOOD= 165.5567

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	45.0451	1	0.0000	
LIKELIHOOD RATIO	34.6043	1	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

ANALYSIS (LIKELIHOOD).....	UNCONDITIONAL
TOLERANCE	0.0000010000
CONVERGENCE	0.00000100000
ITERATIONS	15
CONFIDENCE LEVEL	95%
RECORDS IN ANALYSIS	200
ERROR OR WARNING MESSAGES ...	NONE
TIME (SECONDS)	0.060

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:48:05.91 Page 2

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	LOC1	3.5529	0.8231	4.3167	0.0000	34.915	6.957	175.235	
SINGLE	TYP	2.0834	0.7994	2.6063	0.0092	8.032	1.676	38.481	
	CONSTANT	-3.5218	0.7766	-4.5349	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 6) = -77.2570

-2*MAXIMIZED LOG-LIKELIHOOD= 154.5140

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	51.8434	2	0.0000	
LIKELIHOOD RATIO	45.6470	2	0.0000	
LIKELIHOOD RATIO	11.0427	1	0.0009	TYP

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050

```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:48:16.95 Page 3

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4311	0.8377	4.0960	0.0000	30.912	5.985	159.649	
SINGLE	TYP	2.0211	0.7981	2.5323	0.0113	7.547	1.579	36.069	
SINGLE	CPR	0.6111	0.7490	0.8160	0.4145	1.843	0.425	7.997	
	CONSTANT	-3.5041	0.7713	-4.5430	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -76.9410

-2*MAXIMIZED LOG-LIKELIHOOD= 153.8820

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	52.4978	3	0.0000	
LIKELIHOOD RATIO	46.2790	3	0.0000	
LIKELIHOOD RATIO	0.6320	1	0.4266	CPR

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.00000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:48:44.30 Page 4

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	LOC1	3.4711	0.8408	4.1282	0.0000	32.173	6.191	167.197	
SINGLE	TYP	1.8157	0.8481	2.1409	0.0323	6.145	1.166	32.393	
SINGLE	CPR	0.4878	0.7632	0.6391	0.5227	1.629	0.365	7.269	
SINGLE	SER	-0.3478	0.4658	-0.7466	0.4553	0.706	0.283	1.760	
	CONSTANT	-3.1688	0.8915	-3.5544	0.0004				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 7) = -76.6567

-2*MAXIMIZED LOG-LIKELIHOOD= 153.3134

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	53.0007	4	0.0000	
LIKELIHOOD RATIO	46.8476	4	0.0000	
LIKELIHOOD RATIO	0.5686	1	0.4508	SER

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
  
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:49:33.02 Page 5

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4311	0.8377	4.0960	0.0000	30.912	5.985	159.649	
SINGLE	TYP	2.0211	0.7981	2.5323	0.0113	7.547	1.579	36.069	
SINGLE	CPR	0.6111	0.7490	0.8160	0.4145	1.843	0.425	7.997	
	CONSTANT	-3.5041	0.7713	-4.5430	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 6) = -76.9410

-2*MAXIMIZED LOG-LIKELIHOOD= 153.8820

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	52.4978	3	0.0000	
LIKELIHOOD RATIO	46.2790	3	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.00000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
  
```

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4555	0.8533	4.0494	0.0001	31.673	5.947	168.682	
SINGLE	TYP	1.8991	0.7940	2.3918	0.0168	6.680	1.409	31.672	
SINGLE	CPR	0.4868	0.7636	0.6375	0.5238	1.627	0.364	7.268	
SINGLE	INF	0.6704	0.4214	1.5909	0.1116	1.955	0.856	4.466	
	CONSTANT	-3.7133	0.7811	-4.7539	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 7) = -75.6601

-2*MAXIMIZED LOG-LIKELIHOOD= 151.3203

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	54.5420	4	0.0000	
LIKELIHOOD RATIO	48.8407	4	0.0000	
LIKELIHOOD RATIO	2.5617	1	0.1095	INF

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:50:23.72 Page 7

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	----	-----	-----	-----
SINGLE	LOC1	3.4311	0.8377	4.0960	0.0000	30.912	5.985	159.649	
SINGLE	TYP	2.0211	0.7981	2.5323	0.0113	7.547	1.579	36.069	
SINGLE	CPR	0.6111	0.7490	0.8160	0.4145	1.843	0.425	7.997	
	CONSTANT	-3.5041	0.7713	-4.5430	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -76.9410

-2*MAXIMIZED LOG-LIKELIHOOD= 153.8820

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	52.4978	3	0.0000	
LIKELIHOOD RATIO	46.2790	3	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:50:31.08 Page 8

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	LOC1	3.4711	0.8408	4.1282	0.0000	32.173	6.191	167.197	
SINGLE	TYP	1.8157	0.8481	2.1409	0.0323	6.145	1.166	32.393	
SINGLE	CPR	0.4878	0.7632	0.6391	0.5227	1.629	0.365	7.269	
SINGLE	SER	-0.3478	0.4658	-0.7466	0.4553	0.706	0.283	1.760	
	CONSTANT	-3.1688	0.8915	-3.5544	0.0004				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 7) = -76.6567

-2*MAXIMIZED LOG-LIKELIHOOD= 153.3134

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	53.0007	4	0.0000	
LIKELIHOOD RATIO	46.8476	4	0.0000	
LIKELIHOOD RATIO	0.5686	1	0.4508	SER

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.110
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:51:04.86 Page 9

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4311	0.8377	4.0960	0.0000	30.912	5.985	159.649	
SINGLE	TYP	2.0211	0.7981	2.5323	0.0113	7.547	1.579	36.069	
SINGLE	CPR	0.6111	0.7490	0.8160	0.4145	1.843	0.425	7.997	
	CONSTANT	-3.5041	0.7713	-4.5430	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805

LOG-LIKELIHOOD (CYCLE 6) = -76.9410

-2*MAXIMIZED LOG-LIKELIHOOD= 153.8820

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	52.4978	3	0.0000	
LIKELIHOOD RATIO	46.2790	3	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.00000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:51:20.89 Page 10

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.3952	0.8436	4.0247	0.0001	29.821	5.707	155.817	
SINGLE	TYP	1.9722	0.7967	2.4755	0.0133	7.187	1.508	34.252	
SINGLE	CPR	0.4910	0.7635	0.6431	0.5202	1.634	0.366	7.297	
SINGLE	CRN	0.7121	0.6149	1.1580	0.2469	2.038	0.611	6.802	
	CONSTANT	-3.5315	0.7695	-4.5895	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -76.3104

-2*MAXIMIZED LOG-LIKELIHOOD= 152.6208

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	53.6680	4	0.0000	
LIKELIHOOD RATIO	47.5401	4	0.0000	
LIKELIHOOD RATIO	1.2612	1	0.2614	CRN

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:51:37.65 Page 11

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4129	0.8421	4.0530	0.0001	30.353	5.827	158.122	
SINGLE	TYP	1.9106	0.8003	2.3872	0.0170	6.757	1.408	32.433	
SINGLE	CPR	0.5651	0.7738	0.7303	0.4652	1.760	0.386	8.019	
SINGLE	CRN	0.5214	0.6456	0.8076	0.4193	1.684	0.475	5.970	
SINGLE	CRE	0.9224	0.7898	1.1678	0.2429	2.515	0.535	11.827	
	CONSTANT	-3.5233	0.7703	-4.5738	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -75.6740

-2*MAXIMIZED LOG-LIKELIHOOD= 151.3480

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	54.8071	5	0.0000	
LIKELIHOOD RATIO	48.8130	5	0.0000	
LIKELIHOOD RATIO	1.2729	1	0.2592	CRE

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:51:54.78 Page 12

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.3952	0.8436	4.0247	0.0001	29.821	5.707	155.817	
SINGLE	TYP	1.9722	0.7967	2.4755	0.0133	7.187	1.508	34.252	
SINGLE	CPR	0.4910	0.7635	0.6431	0.5202	1.634	0.366	7.297	
SINGLE	CRN	0.7121	0.6149	1.1580	0.2469	2.038	0.611	6.802	
	CONSTANT	-3.5315	0.7695	-4.5895	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -76.3104

-2*MAXIMIZED LOG-LIKELIHOOD= 152.6208

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	53.6680	4	0.0000	
LIKELIHOOD RATIO	47.5401	4	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:52:03.41 Page 13

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4831	0.8494	4.1004	0.0000	32.560	6.161	172.087	
SINGLE	TYP	2.3131	0.8242	2.8064	0.0050	10.106	2.009	50.835	
SINGLE	CPR	0.7915	0.8079	0.9797	0.3272	2.207	0.453	10.751	
SINGLE	CRN	0.4700	0.6232	0.7542	0.4507	1.600	0.472	5.427	
SINGLE	AGE1	1.1665	0.4596	2.5378	0.0112	3.211	1.304	7.904	
	CONSTANT	-4.5092	0.8949	-5.0388	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 7) = -72.8317

-2*MAXIMIZED LOG-LIKELIHOOD= 145.6634

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	58.4968	5	0.0000	
LIKELIHOOD RATIO	54.4976	5	0.0000	
LIKELIHOOD RATIO	6.9574	1	0.0083	AGE1

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:52:15.54 Page 14

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
SINGLE	LOC1	3.4886	0.8477	4.1153	0.0000	32.740	6.216	172.451	
SINGLE	TYP	2.2570	0.8288	2.7231	0.0065	9.554	1.882	48.497	
SINGLE	CPR	0.8150	0.8039	1.0138	0.3107	2.259	0.467	10.920	
SINGLE	CRN	0.3825	0.6344	0.6029	0.5466	1.466	0.423	5.084	
SINGLE	AGE1	1.1641	0.4605	2.5280	0.0115	3.203	1.299	7.898	
SINGLE	BIC	0.4737	0.6491	0.7298	0.4655	1.606	0.450	5.732	
	CONSTANT	-4.5028	0.8952	-5.0300	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -72.5751

-2*MAXIMIZED LOG-LIKELIHOOD= 145.1502

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
SCORE	59.1242	6	0.0000	
LIKELIHOOD RATIO	55.0108	6	0.0000	
LIKELIHOOD RATIO	0.5132	1	0.4738	BIC

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.050
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:52:34.60 Page 15

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	-----	-----	-----	-----	-----	-----	-----
SINGLE	LOC1	3.4831	0.8494	4.1004	0.0000	32.560	6.161	172.087	
SINGLE	TYP	2.3131	0.8242	2.8064	0.0050	10.106	2.009	50.835	
SINGLE	CPR	0.7915	0.8079	0.9797	0.3272	2.207	0.453	10.751	
SINGLE	CRN	0.4700	0.6232	0.7542	0.4507	1.600	0.472	5.427	
SINGLE	AGE1	1.1665	0.4596	2.5378	0.0112	3.211	1.304	7.904	
	CONSTANT	-4.5092	0.8949	-5.0388	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 7) = -72.8317

-2*MAXIMIZED LOG-LIKELIHOOD= 145.6634

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	58.4968	5	0.0000	
LIKELIHOOD RATIO	54.4976	5	0.0000	

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000010000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```

MULTLR - MULTIPLE LOGISTIC REGRESSION BY UNCONDITIONAL AND CONDITIONAL METHODS - Wednesday, Feb 4, 1999 08:52:44.87 Page 16

CUTPOINT	TERM	COEFF.	S.E.	Z-SCORE	P-VALUE	O.R.	LOWER	UPPER	REF.CATEG.
-----	----	-----	----	-----	-----	----	-----	-----	-----
SINGLE	LOC1	3.4880	0.8563	4.0734	0.0000	32.720	6.108	175.270	
SINGLE	TYP	2.2812	0.8231	2.7714	0.0056	9.789	1.950	49.134	
SINGLE	CPR	0.7686	0.8152	0.9428	0.3458	2.157	0.436	10.659	
SINGLE	CRN	0.5269	0.6346	0.8302	0.4064	1.694	0.488	5.875	
SINGLE	AGE1	1.1716	0.4604	2.5446	0.0109	3.227	1.309	7.957	
SINGLE	SYS1	-0.2471	0.4442	-0.5563	0.5780	0.781	0.327	1.865	
	CONSTANT	-4.3327	0.9420	-4.5993	0.0000				

LOG-LIKELIHOOD (CYCLE 1) = -100.0805
 LOG-LIKELIHOOD (CYCLE 6) = -72.6780

-2*MAXIMIZED LOG-LIKELIHOOD= 145.3561

TEST	STATISTIC	D.F.	P-VALUE	VARIABLES
----	-----	----	-----	-----
SCORE	58.7341	6	0.0000	
LIKELIHOOD RATIO	54.8049	6	0.0000	
LIKELIHOOD RATIO	0.3074	1	0.5793	SYS1

CRITERIA AND MODEL-BUILDING CHARACTERISTICS:

```

-----
ANALYSIS (LIKELIHOOD)..... UNCONDITIONAL
TOLERANCE ..... 0.0000010000
CONVERGENCE ..... 0.0000100000
ITERATIONS ..... 15
CONFIDENCE LEVEL ..... 95%
RECORDS IN ANALYSIS ..... 200
ERROR OR WARNING MESSAGES ... NONE
TIME (SECONDS) ..... 0.060
    
```


ANEXO 3

LEITURAS

ROTEIRO PARA OS SEMINÁRIOS

1. Qual é o delineamento do estudo?
2. Quais os objetivos do trabalho?
3. . Como foi selecionada a amostra? Foi feito o cálculo do tamanho da mesma?
4. Qual(ais) a(s) metodologia(s) estatística(s) utilizada(s) para a análise dos dados? Com que objetivo? As suposições foram satisfeitas?
5. Qual a variável dependente? E as independentes? Classifique-as como quantitativa ou qualitativa.
6. Como foi o processo de modelagem?
7. Quais os principais problemas encontrados na modelagem? Como foram contornados?
8. Foi testada interação? Há referências de variáveis de confusão?
9. Foi feita análise de resíduos?
10. Quais as conclusões do(s) autor(es)?
11. A análise de regressão foi útil? Por que? O modelo foi adequado para a análise? Por que?
12. Quais as críticas ao trabalho? (Se houver).