

Original Table of Correlations

1 2 3 4 5 6 7 8 9 10 11 12 13

Arabic Engl. Math. Tech-nology Shop Work Tech. Draw. Prog. Mat. Steph. "G" Cairo "G" Verb "G" Person-ality Koh's Cube Con.

Table of correlations between variables 1-13. Values range from .553 to -.398.

Totals 3.042 4.022 4.915 3.762 2.448 4.849 6.493 7.493 7.488 4.442 1.788 6.915 5.027

Group I (Technical School, Boys)

14 15 16 17 18 19 20 21 22 23 24 25 26 27

Carl H.S.Q. Moray House PLozen. Thur. Cube Punched Hole F.B. Faces Iden. N Mirror Eye B Nail B Nail St. Cox Mech. Rating Totals

Table of correlations between variables 14-27. Values range from -.253 to .398.

Totals 5.348 6.851 4.330 4.500 5.226 5.799 3.879 4.364 5.341 3.125 4.951 2.349 2.827 6.262 127.836

reciproc = .08842 127.836 = 2 (11.307)

check 11.304

First Residual Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
	.2690	.3556	.4346	.3326	.2165	.4287	.5741	.6625	.6621	.3928	.1581	.6114	.4445
.2690	(.4806)	.4573	.3711	.3475	.1498	.2367	-.0944	-.1472	-.0441	-.0077	-.2435	-.1795	-.1766
.3556	.4573	(.4265)	.2745	.3157	-.0550	.0365	.1759	-.1206	.0585	-.0827	-.0442	-.1904	-.1681
.4346	.3711	.2745	(.3821)	.3685	.1969	.1367	-.5935	-.0879	-.1357	-.2237	-.0417	-.1767	-.0732
.3326	.3475	.3157	.3685	(.4024)	.2250	-.0036	.0031	-.1183	-.1292	-.3256	-.0056	-.0454	-.0429
.2165	.1498	-.0550	.1969	.2250	(.2951)	.0682	-.3893	-.1664	-.2803	-.3420	-.1202	-.0404	.1478
.4287	.2367	.0365	.1367	-.0036	.0682	(.1842)	-.1231	-.2000	-.1119	.0756	-.2518	.1009	-.1806
.5741	-.0944	.1759	-.5935	.0031	-.3893	-.1231	(.3854)	.3347	.2829	.2185	.0582	.1050	.0238
.6625	-.1472	-.1206	-.0879	-.1183	-.1664	-.2000	(.3347)	(.2761)	.1854	.0928	.0153	.1879	-.0075
.6621	-.0441	.0585	-.1357	-.1292	-.2803	-.1119	.2829	.1854	(.2246)	.2789	-.1267	.0232	-.1383
.3928	-.0077	-.0827	-.2237	-.3256	-.3420	-.0756	.2185	.0928	.2789	(.3847)	-.0641	.0628	-.0856
.1581	-.2435	-.0442	-.0417	-.0056	-.1202	-.2518	.0582	.0153	-.1267	-.0641	(.3430)	.2143	.2977
.6114	-.1795	-.1904	-.1767	-.0454	-.0404	.1009	.1050	.1879	.0232	.0628	.2143	(.2192)	.1522
.4445	-.1766	-.1681	-.0432	-.0429	.1478	-.1806	.0238	-.0075	-.1383	-.0856	.2977	.1522	(.2474)
.4729	-.3802	-.4912	.0025	-.0013	.0986	-.1627	-.1215	-.1203	-.3451	-.3967	.1572	.0539	.2348
.6058	-.1980	-.1594	-.1933	-.1205	-.1152	.1063	.1002	.2297	.0389	.2560	-.1928	.1666	.0017
.3829	-.0010	-.1761	.0446	-.0654	.2231	-.0941	-.2098	-.1847	-.0905	.0066	.1115	-.2511	.0558
.3979	.1040	-.1515	-.1019	-.1283	.1939	.0104	-.1774	-.2336	-.0115	-.0453	.1061	-.1323	.1091
.4621	-.1770	-.2383	-.1268	-.1547	-.1960	-.0271	.1357	.0959	.0190	.1765	.0409	.1555	-.0674
.5127	-.3909	-.1833	.0022	-.1125	.1000	.0032	.1157	.0093	-.1825	-.0994	-.0511	-.0025	.0171
.3430	.0187	-.0330	-.0471	-.2601	-.2022	.0309	.0161	.0088	.0929	.2233	.2008	-.0827	-.0285
.3859	.2262	.2888	-.1066	.1136	-.0045	-.0034	-.0915	.0533	-.0055	.0624	-.0850	-.0549	-.1475
.4723	.1789	.3601	-.0983	-.0351	-.1373	.1655	-.1161	.0781	.1873	.0705	-.0367	-.0498	-.2499
.2763	-.2123	-.0623	.0229	-.0259	.2762	-.3214	-.1486	.0279	-.0049	-.2575	.2053	-.2209	.1222
.4378	-.1278	-.0697	.1557	.0247	.2472	.0493	-.0933	-.2621	-.1929	-.2480	-.0042	-.2167	-.0466
.2077	-.1709	-.2089	-.1523	-.2471	.0770	.1879	-.2282	-.2096	.2045	.1284	.0202	.1200	.0687
.2500	-.2673	-.2949	-.1567	-.1021	-.1791	.0008	.2325	.2154	.2615	.1898	-.4085	.1621	-.0931
.5537	.2491	.3391	.3304	.1228	-.0689	.0896	.2031	.0522	-.0546	-.0465	-.0935	-.0765	-.0001

Group I (Technical School Boys)

	14	15	16	17	18	19	20	21	22	23	24	25	26	27
	.4729	.6058	.3829	.3979	.4621	.5127	.3430	.3859	.4723	.2763	.4378	.2077	.2500	.5537
-.3802	-.1980	-.0010	.1040	-.1770	-.3909	.0187	.2262	.1789	-.2123	-.1278	-.1709	-.2673	.2491	
-.4912	-.1594	-.1761	-.1515	-.2383	-.1833	-.0330	.2888	.3601	-.0623	-.0697	-.2089	-.2949	.3391	
.0025	-.1933	.0446	-.1019	-.1268	.0022	-.0471	-.1066	-.0983	.0229	.1557	.1523	-.1567	.3304	
-.0013	-.1205	-.0654	-.1283	-.1547	-.1125	-.2601	.1136	-.0351	-.0259	.0274	-.2471	-.1021	.1228	
.0986	-.1152	.2231	.1939	-.1960	.1000	-.2022	-.0045	-.1373	.2762	.2472	.0770	-.1791	-.0689	
-.1627	.1063	-.0941	.0104	-.0271	.0032	.0309	-.0034	.1655	-.3214	.0493	.1879	.0008	.0896	
-.1215	.1002	-.2098	-.1774	.1357	.1157	.0161	-.0915	-.1161	-.1486	-.0933	-.2282	.2325	.2031	
-.1203	.2297	-.1847	-.2336	.0959	.0093	.0088	.0533	.0781	.0279	-.2621	-.2096	.2154	.0522	
-.3451	.0389	-.0905	-.0115	.0190	-.1825	.0929	-.0055	.1873	-.0049	-.1929	.2045	.2615	-.0546	
-.3967	.2560	.0066	-.0453	.1765	-.0994	.2233	.0624	.0705	-.2575	-.2480	.1284	.1898	-.0465	
.1572	-.1928	.1115	.1061	.0409	-.0511	.2008	-.0850	-.0367	.2053	-.0042	.0202	-.4085	-.0935	
.0539	.1666	-.2511	-.1323	.1555	-.0025	-.0827	-.0549	-.0498	-.2209	-.2167	.1200	.1621	-.0765	
.2348	.0017	.0558	.1091	-.0674	.0171	-.0285	-.1475	-.2499	.1222	-.0466	.0687	-.0931	-.0001	
(.3984)	.0485	.2639	.0498	-.0845	.1895	-.1202	-.1145	-.0794	.2853	.4150	.1718	.0638	-.0129	
.0485	(.2640)	-.2110	-.1941	.1691	.0864	.0462	-.0128	.1199	-.2174	-.0232	.0982	.2845	-.3754	
.2639	-.2110	(.4254)	.4197	-.0519	-.0883	.1427	-.1818	-.1838	.1932	.0504	-.0345	-.0857	-.0250	
.0498	-.1941	.4197	(.4137)	.1291	-.0190	.0625	-.3120	.1241	.0621	-.1252	.0813	-.0790	-.1513	
-.0845	.1691	-.0519	.1291	(.3045)	.2811	-.1835	-.0343	-.0353	-.1627	-.2843	.0980	.2605	-.0389	
.1895	.0864	-.0883	-.0190	.2811	(.2551)	-.2529	-.1319	.0269	.1053	.2815	.0405	.0298	-.0259	
-.1202	.0462	.1427	.0625	-.1835	-.2529	(.2403)	.1126	.0700	.0032	-.1402	.0927	.0763	-.0859	
-.1145	-.0128	-.1818	-.3120	-.0343	-.1319	.1126	(.2771)	.2437	-.0706	-.0909	.0298	-.0015	.0443	
-.0794	.1199	-.1838	.1241	-.0353	.0269	.0700	.2437	(.3049)	-.1675	-.1928	-.2091	-.2261	-.1105	
.2853	-.2174	.1932	.0621	-.1627	.1053	.0032	-.0706	-.1675	(.3397)	.2650	.1386	-.0101	-.1630	
.4150	-.0232	.0504	-.1252	-.2843	.2815	-.1402	-.0909	-.1928	.2650	(.4303)	.2571	-.0695	.0106	
.1718	.0982	-.0345	.0813	.0980	.0405	.0927	.0298	-.2091	.1386	.2571	(.3049)	.0141	-.1840	
.0638	.2845	-.0857	-.0790	.2605	.0298	.0763	-.0015	-.2261	-.0101	-.0695	.0141	(.3735)	-.1894	
-.0129	-.3754	-.0250	-.1513	-.0389	-.0259	-.0859	.0443	-.1105	-.1630	.0106	-.1840	-.1894	(.2644)	

First Residual Matrix. Signs changed.

1	2	3	4	5	6	7	8	9	10	11	12	13	
.4573	.4573	.3711	.3475	.1498	.2367	.0944	.1472	.0441	.0077	.2435	.1795	.1766	
.4573	(.4912)	.2745	.3157	-.0550	.0365	-.1759	.1206	-.0585	.0827	.0442	.1904	.1681	
.3711	.2745	(.5935)	.3685	.1969	.1367	.5935	.0879	.1357	.2237	.0417	.1767	.0432	
.3475	.3157	.3685	(.3685)	.2250	-.0036	-.0031	.1183	.1292	.3256	.0056	.0454	.0429	
.1498	-.0550	.1969	.2250	(.3893)	.0682	.3893	.1664	.2803	.3420	.1202	.0404	-.1478	
.2367	.0365	.1367	-.0036	.0682	(.3214)	.1231	.2000	.1119	-.0756	.2518	-.1009	.1806	
.0944	-.1759	.5935	-.0031	.3893	.1231	(.5935)	.3347	.2829	.2185	.0582	.1050	.0238	
.1472	.1206	.0879	.1183	.1664	.2000	.3347	(.3347)	.1854	.0928	.0153	.1879	-.0075	
.0441	-.0585	.1357	.1292	.2803	.1119	.2829	.1854	(.3451)	.2789	-.1267	.0232	-.1383	
.0077	.0827	.2237	.3256	.3420	-.0756	.2185	.0928	.2789	(.3967)	-.0641	.0628	-.0856	
.2435	.0442	.0417	.0056	.1202	.2518	.0582	.0153	-.1267	-.0641	(.4085)	.2143	.2977	
.1795	.1904	.1767	.0545	.0404	-.1009	.1050	.1879	.0232	.0628	.2143	(.2511)	.1522	
.1766	.1681	.0432	.0429	-.1478	.1806	.0238	-.0075	-.1383	-.0856	.2977	.1522	(.2977)	
.3802	.4912	-.0025	.0013	-.0986	.1627	-.1215	-.1203	-.3451	-.3967	.1572	.0539	.2348	
.1980	.1594	.1933	.1205	.1152	-.1063	.1002	.2297	.0389	.2560	-.1928	.1666	.0017	
.0010	.1761	-.0446	.0654	-.2231	.0941	-.2098	-.1847	-.0905	.0066	.1115	-.2511	.0558	
-.1040	.1515	.1019	.1283	-.1939	-.0104	-.1774	-.2336	-.0115	-.0453	.1061	-.1323	.1091	
.1770	.2383	.1268	.1547	.1960	.0271	.1357	.0959	.0190	.1765	.0409	.1555	-.0674	
.3909	.1833	-.0022	.1125	-.1000	-.0032	.1157	.0093	-.1825	-.0994	-.0511	-.0025	.0171	
-.0187	.0330	.0471	.2601	.2022	-.0309	.0161	.0088	.0929	.2233	.2008	-.0827	-.0285	
.2262	.2888	-.1066	.1136	-.0045	-.0034	.0915	-.0533	.0055	-.0624	.0850	.0549	.1475	
.1789	.3601	-.0983	-.0351	-.1373	.1655	.1161	-.0781	-.1873	-.0705	.0367	.0498	.2499	
.2123	.0623	-.0229	.0259	-.2762	.3214	-.1486	.0279	-.0049	-.2575	.2053	-.2209	.1222	
-.1278	-.0697	.1557	.0274	.2472	.0493	.0933	.2621	.1929	.2480	.0042	.2167	.0466	
.1709	.2089	.1523	.2471	-.0770	-.1879	-.2282	-.2046	.2045	.1284	.0202	.1200	.0687	
.2673	.2949	.1567	.1021	.1791	-.0008	.2325	.2154	.2615	.1898	-.4085	.1621	-.0931	
.2491	.3391	.3304	.1228	-.0689	.0896	-.2031	-.0522	.0546	.0465	.0935	.0765	.0001	
Totals	5.1140	4.8090	4.2307	3.7321	1.9252	2.0536	2.4504	1.9010	1.5412	2.1494	1.9192	1.8945	1.8681

Group I (Technical School Boys)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	Totals
.3802	.1980	.0010	-.1040	.1770	.3909	-.0187	.2262	.1789	.2123	-.1278	.1709	.2673	.2491	5.1140
.4912	.1594	.1761	.1515	.2383	.1833	.0330	.2888	.3601	.0623	-.0697	.2089	.2949	.3391	4.8090
-.0025	.1933	-.0446	.1019	.1268	-.0022	.0471	-.1066	-.0983	-.0229	.1557	.1523	.1567	.3304	4.2307
.0013	.1205	.0654	.1283	.1547	.1125	.2601	.1136	-.0351	.0259	.0274	.2471	.1021	.1228	3.7321
-.0986	.1152	-.2231	-.1939	.1960	-.1000	.2022	-.0045	-.1373	-.2762	.2472	-.0770	.1791	-.0689	1.9252
.1627	-.1063	.0941	-.0104	.0271	-.0032	-.0309	-.0034	.1655	.3214	.0493	-.1879	-.0008	.0896	2.0536
-.1215	.1002	-.2098	-.1774	.1357	.1157	.0161	.0915	.1161	-.1486	.0933	-.2282	.2325	-.2031	2.4504
-.1203	.2297	-.1847	-.2336	.0959	.0093	.0088	-.0533	-.0781	.0279	.2621	-.2096	.2154	-.0522	1.9010
-.3451	.0389	-.0905	-.0115	.0190	-.1825	.0929	.0055	-.1873	-.0049	.1929	.2045	.2615	.0546	1.5412
-.3967	.2560	.0066	-.0453	.1765	-.0994	.2233	-.0624	-.0705	-.2575	.2480	.1284	.1898	.0465	2.1494
.1572	-.1928	.1115	.1061	.0409	-.0511	.2008	.0850	.0367	.2053	.0042	.0202	-.4085	.0935	1.9192
.0539	.1666	-.2511	-.1323	.1555	-.0025	-.0827	.0549	.0498	-.2209	.2167	.1200	.1621	.0765	1.8945
.2348	.0017	.0558	.1091	-.0674	.0171	-.0285	.1475	.2499	.1222	.0466	.0687	-.0931	.0001	1.8681
(.4912)	.0485	.2639	.0498	-.0845	.1895	-.1202	.1145	.0794	.2853	-.4150	.1718	.0638	.0129	1.5475
.0485	(.3754)	-.2110	-.1941	.1691	.0864	.0462	.0128	-.1199	-.2174	.0232	.0982	.2845	.3754	2.0577
.2639	-.2110	(.4197)	.4197	-.0519	-.0883	.1427	.1818	.1838	.1932	-.0504	-.0345	-.0857	.0250	.8147
.0498	-.1941	.4197	(.4197)	.1291	-.0190	.0625	.3120	-.1241	.0621	.1252	.0813	-.0790	.1513	1.0850
-.0845	.1691	-.0519	.1291	(.2843)	.2811	-.1835	.0343	.0353	-.1627	.2843	.0980	.2605	.0389	2.6083
.1895	.0864	-.0883	-.0190	.2811	(.3909)	-.2529	.1319	-.0269	.1053	-.2815	.0405	.0298	.0259	1.0006
-.1202	.0462	.1427	.0625	-.1835	-.2529	(.2601)	-.1126	-.0700	.0032	.1402	.0927	.0763	.0859	1.0941
.1145	.0128	.1818	.3120	.0343	.1319	-.1126	(.3120)	.2437	.0706	-.0909	-.0298	.0015	.0443	2.0089
.0794	-.1199	.1838	-.1241	.0353	-.0269	-.0700	.2437	(.3601)	.1675	-.1928	.2091	.2261	-.1105	1.4112
.2853	-.2174	.1932	.0621	-.1627	.1053	.0032	.0706	.1675	(.3214)	-.2650	.1386	-.0101	.1630	.9013
-.4150	.0232	-.0504	.1252	.2843	-.2815	.1402	-.0909	-.1928	-.2650	(.4150)	-.2571	.0695	.0106	.8612
.1718	.0982	-.0345	.0813	.0980	.0405	.0927	-.0298	.2091	.1386	-.2571	(.2571)	.0141	.1840	1.6822
.0638	.2845	-.0857	-.0790	.2605	.0298	.0763	.0015	.2261	-.0101	.0695	.0141	(.4085)	.1894	3.0082
.0129	.3754	.0250	.1513	.0389	.0259	.0859	.0443	-.1105	.1630	.0106	.1840	.1894	(.3754)	2.6495
1.5475	2.0577	.8147	1.0850	2.6083	1.0006	1.0941	2.0089	1.4112	.9013	.8612	1.6822	3.0082	2.6495	58.3188

reciproc = .13094 58.3188 = ²(7.6367)

check = 7.6363

	1	2	3	4	5	6	7	8	9	10	11	12	13
	.6696	.6297	.5540	.4887	.2521	.2689	.3209	.2489	.2018	.2814	.2513	.2481	.2446

.6696	(.0089)	.0356	.0001	.0204	-.0190	.0566	-.1205	-.0195	-.0910	-.1807	.0752	.0134	.0128
.6297	.0356	(.0947)	-.0744	.0080	-.2137	-.1328	-.3780	-.0361	-.1856	-.0945	-.1141	.0342	.0141
.5540	.0001	-.0744	(.2866)	.0978	.0572	-.0123	.4157	-.0500	.0239	.0678	-.0975	.0393	-.0923
.4887	.0202	.0080	.0978	(.1297)	.1018	-.1350	-.1599	.0033	.0306	.1881	-.1173	-.0759	-.0766
.2521	-.0190	-.2137	.0572	.1018	(.3257)	.0004	.3084	.1037	.2294	.2711	.0568	-.0221	-.2095
.2689	.0566	-.1328	-.0123	-.1350	.0004	(.2491)	.0368	.1331	.0576	-.1513	.1843	-.1676	.1148
.3209	-.1205	-.3780	.4157	-.1599	.3084	.0368	(.4905)	.2548	.2181	.1282	-.0225	.0254	-.0547
.2489	-.0195	-.0361	-.0500	-.0033	.1037	.1331	.2548	(.2727)	.1352	.0227	-.0473	.1261	-.0684
.2018	-.0910	-.1856	.0239	.0306	.2294	.0576	.2181	.1352	(.3044)	.2221	-.1774	-.0269	-.1877
.2814	-.1807	-.0945	.0678	.1881	.2711	-.1513	.1282	.0227	.2221	(.3175)	-.1348	-.0070	-.1544
.2513	.0752	-.1141	-.0975	-.1173	.0568	.1843	-.0225	-.0473	-.1774	-.1348	(.3453)	.1519	.2362
.2481	.0134	.0342	.0393	-.0759	-.0221	-.1676	.0254	.1261	-.0269	-.0070	.1519	(.1895)	.0915
.2446	.0128	.0141	-.0923	-.0766	-.2095	.1148	-.0547	-.0684	-.1877	-.1544	.2362	.0915	(.2379)
.2026	.2445	.3636	-.1147	-.0977	-.1497	.1082	-.1865	-.1707	-.3860	-.4537	.1063	.0036	.1852
.2694	.0176	-.0103	.0441	-.0112	.0473	-.1784	.0137	.1626	-.0155	.1802	-.2605	.0998	-.0642
.1067	-.0705	.1089	-.1037	.0133	-.2500	.0654	-.2440	-.2112	-.1120	-.0234	.0847	-.2773	.0297
.1421	-.1991	.0620	.0232	.0589	-.2297	-.0486	-.2230	-.2690	-.0402	-.0853	.0704	-.1676	.0743
.3415	-.0507	.0232	-.0624	-.0122	.1099	-.0647	.0261	.0109	-.0499	.0804	-.0449	.0708	-.1509
.1310	.3032	.1008	-.0748	.0485	-.1330	-.0384	-.0737	-.0233	-.2089	-.1363	-.0840	-.0350	-.0149
.1433	-.1146	-.0572	-.0323	.1901	.1661	-.0694	-.0299	-.0269	.0640	.1830	.1648	-.1182	-.0636
.2630	.0501	.1232	-.2523	-.0149	-.0708	-.1839	-.3059	-.2187	-.1325	.0798	-.1563		
.1848	.0551	.2437	-.2007	-.1254	-.1839	.1158	.0568	-.1240	-.2246	-.1225	-.0097	.0033	.2047
.1180	.1333	-.0120	-.0883	-.0318	-.3059	.2897	-.1865	-.0015	-.0287	-.2907	.1756	-.2505	.0933
.1128	-.2033	-.1707	.0932	-.0277	.2187	.0190	.0571	.2340	.1701	.2163	-.0241	.1887	.0190
.2203	.0234	.0702	.0303	.1394	-.1325	-.2471	-.2989	-.2644	.1600	.0664	-.0352	.0653	.0148
.3939	.0039	.0469	-.0615	-.0904	.0798	-.1067	.1061	.1173	.1820	.0789	-.5075	.0644	-.1894
.3469	.0168	.1207	.1382	-.0467	-.1563	-.0037	-.3144	-.1385	-.0154	-.0511	.0063	-.0096	-.0847

	14	15	16	17	18	19	20	21	22	23	24	25	26	27
	.2026	.2694	.1067	.1421	.3415	.1310	.1433	.2630	.1848	.1180	.1128	.2203	.3939	.3469

.2445	.0176	-.0705	-.1991	-.0507	.3032	-.1146	.0501	.0551	.1333	-.2033	.0234	.0039	.0168
.3636	-.0103	.1089	.0620	.0232	.1008	-.0572	.1232	.2437	-.0120	-.1407	.0702	.0469	.1207
-.1147	.0441	-.1037	.0232	-.0624	-.0748	-.0323	-.2523	-.2007	-.0883	.0932	.0303	-.0615	.1382
-.0977	-.0112	.0133	.0589	-.0122	.0485	.1901	-.0149	-.1254	-.0318	-.0277	.1394	-.0904	-.0467
-.1497	.0473	-.2500	-.2297	.1099	-.1330	.1661	-.0708	-.1839	-.3059	.2187	-.1325	.0798	-.1563
.1082	-.1784	.0654	-.0486	-.0647	-.0384	-.0694	-.0741	.1158	.2897	.0190	-.2471	-.1067	-.0037
-.1865	.0137	-.2440	-.2230	.0261	.0737	-.0299	.0071	.0568	-.1865	.0571	-.2989	.1061	-.3144
-.1707	.1626	-.2112	-.2690	.0109	-.0233	-.0269	-.1188	-.1240	-.0015	.2340	-.2644	.1173	-.1385
-.3860	-.0155	-.1120	-.0402	-.0499	-.2089	.0640	-.0476	-.2246	-.0287	.1701	.1600	.1820	-.0154
-.4537	.1802	-.0234	-.0853	.0804	-.1363	.1830	-.1364	-.1225	-.2907	.2163	.0664	.0789	-.0511
.1063	-.2605	.0847	.0704	-.0449	-.0840	.1648	.0189	-.0097	.1756	-.0241	-.0352	-.5075	.0063
.0036	.0998	-.2773	-.1676	.0708	-.0350	-.1182	-.0104	.0033	-.2505	.1887	.0653	.0644	-.0096
.1852	-.0642	.0297	.0743	-.1509	-.0149	-.0636	.0832	.2047	.0933	.0190	.0148	-.1894	-.0847
(.4501)	-.0061	.2423	.0210	-.1537	.1629	-.1492	.0612	.0419	.2614	-.4370	.1272	-.0160	-.0574
-.0061	(.3028)	-.2397	-.2324	.0771	.0511	.0076	-.0581	-.1697	-.2492	-.0072	.0389	.1784	.2819
.2423	-.2397	(.4083)	.4045	-.0883	-.1023	.1274	.1537	.1641	.1806	-.0624	-.0580	-.1277	-.0120
.0210	-.2324	.4045	(.3995)	.0806	-.0376	.0421	.2746	-.1504	.0453	.1092	.0500	-.1350	.1020
-.1537	.0771	-.0883	.0806	(.1677)	.2364	-.2324	-.0555	-.0278	-.2030	.2458	.0228	.1260	-.0796
.1629	.0511	-.1023	-.0376	.2364	(.3737)	-.2717	.0974	-.0511	.0898	-.2963	.0116	-.0218	-.0195
-.1492	.0076	.1274	.0421	-.2324	-.2717	(.2396)	-.1503	-.0965	-.0137	.1240	.0611	.0198	.0362
.0612	-.0581	.1537	.2746	-.0555	.0974	-.1503	(.2428)	.1951	.0396	-.1206	-.0877	-.1021	-.0469
.0419	-.1697	.1641	-.1504	-.0278	-.0511	-.0965	.1951	(.3259)	.1457	-.2136	.1684	.1533	-.1746
.2614	-.2492	.1806	.0453	-.2030	.0898	-.0137	.0396	.1457	(.3075)	-.2783	.1126	-.0566	.1221
-.4370	-.0072	-.0624	.1092	.2458	-.2963	.1240	-.1206	-.2136	-.2783	(.4023)	-.2819	.0251	-.0285
.1272	.0389	-.0580	.0500	.0228	.0116	.0611	-.0877	.1684	.1126	-.2819	(.2086)	-.0727	.1076
-.0160	.1784	-.1277	-.1350	.1260	-.0218	.0198	-.1021	.1533	-.0566	.0251	-.0727	(.2533)	.0527
-.0574	.2819	-.0120	.1020	-.0796	-.0195	.0362	-.0469	-.1746	.1221	-.0285	.1076	-.0527	(.2551)

Second Residual Matrix Signs Changed

1	2	3	4	5	6	7	8	9	10	11	12	13	14
(.3032)	.0356	-.0001	-.0204	.0190	.0566	.1205	.0195	.0910	.1807	.0752	-.0134	.0128	.2445
.0356	(.3780)	.0744	-.0080	.2137	-.1328	.3780	.0361	.1856	.0945	-.1141	-.0342	.0141	.3636
-.0001	.0744	(.4157)	.0978	.0572	.0123	.4157	-.0500	.0239	.0678	.0975	.0393	.0923	.1147
-.0202	-.0080	.0978	(.1901)	.1018	.1350	-.1599	.0033	.0306	.1881	.1173	-.0759	.0766	.0977
.0190	.2137	.0572	.1018	(.3059)	-.0004	.3084	.1037	.2294	.2711	-.0568	-.0221	.2095	.1497
.0566	-.1328	.0123	.1350	-.0004	(.2897)	-.0368	-.1331	-.0576	.1513	.1843	.1676	.1148	.1082
.1205	.3780	.4157	-.1599	.3084	-.0368	(.4157)	.2548	.2181	.1282	.0225	.0254	.0547	.1865
.0195	.0361	-.0500	-.0033	.1037	-.1331	.2548	(.2690)	.1352	.0227	.0473	.1261	.0684	.1707
.0910	.1856	.0239	.0306	.2294	-.0576	.2181	.1352	(.3860)	.2221	.1774	-.0269	.1877	.3860
.1807	.0945	.0678	.1881	.2711	.1513	.1282	.0227	.2221	(.4537)	.1348	-.0070	.1544	.4537
.0752	-.1141	.0975	.1173	-.0568	.1843	.0225	.0473	.1774	.1348	(.5075)	-.1519	.2362	.1063
-.0134	-.0342	.0393	-.0759	-.0221	.1676	.0254	.1261	-.0269	-.0070	-.1519	(.2773)	-.0915	-.0036
.0128	.0141	.0923	.0766	.2095	.1148	.0547	.0684	.1877	.1544	.2362	-.0915	(.2362)	.1852
.2445	.3636	.1147	.0977	.1497	.1082	.1865	.1707	.3860	.4537	.1063	-.0036	.1852	(.4537)
-.0176	.0103	+.0441	-.0112	.0473	.1784	.0137	.1626	-.0155	.1802	.2605	.0998	.0642	.0061
-.0705	.1089	.1037	-.0133	.2500	.0654	.2440	.2112	.1120	.0234	.0847	.2773	.0297	.2423
-.1991	.0620	-.0232	-.0589	.2297	-.0486	.2230	.2690	.0402	.0853	.0704	.1676	.0743	.0210
.0507	-.0232	-.0624	-.0122	.1099	.0647	.0261	.0109	-.0499	.0804	.0449	.0708	.1509	.1537
.3032	.1008	.0748	-.0485	.1330	-.0384	-.0737	.0233	.2089	.1363	-.0840	.0350	-.0149	.1629
.1146	.0572	-.0323	.1901	.1661	.0694	-.0299	-.0269	.0640	.1830	-.1648	-.1182	.0636	.1492
.0501	.1232	.2523	.0149	.0708	-.0741	.0071	.1188	.0476	.1364	.0189	.0104	.0832	.0612
.0551	.2437	.2007	.1254	.1839	.1158	-.0568	.1240	.2246	.1225	-.0097	-.0033	.2047	.0419
.1333	-.0120	.0883	.0318	.3059	.2897	.1865	.0015	.0287	.2907	.1756	.2505	.0933	.2614
.2033	.1407	.0932	-.0277	.2187	-.0190	.0571	.2340	.1701	.2163	.0241	.1887	-.0190	.4370
.0234	.0702	-.0303	-.1394	.1325	-.2471	.2989	.2644	-.1600	-.0664	-.0352	-.0653	.0148	.1272
-.0039	-.0469	-.0615	-.0904	.0798	.1067	.1061	.1173	.1820	.0789	.5075	.0644	.1894	.0160
.0168	.1207	-.1382	.0467	.1563	-.0037	.3144	.1385	.0154	.0511	.0063	.0096	-.0847	-.0574
Totals													
1.7841	2.4401	1.9677	.7750	3.9740	1.3183	3.6341	2.7157	3.0566	4.0342	2.2827	1.1965	2.4009	4.6394

Group I (Tech. Sch. Boys).

15	16	17	18	19	20	21	22	23	24	25	26	27
-.0176	-.0705	-.1991	.0507	.3032	.1146	.0501	.0551	.1333	.2033	.0234	-.0039	.0168
.0103	.1089	.0620	-.0232	.1008	.0572	.1232	.2437	-.0120	.1407	.0702	-.0469	.1207
.0441	.1037	-.0232	-.0624	.0748	-.0323	.2523	.2007	.0883	.0932	-.0303	-.0615	-.1382
-.0112	-.0133	-.0589	-.0122	-.0485	.1901	.0149	.1254	.0318	-.0277	-.1394	-.0904	.0467
.0473	.2500	.2297	.1099	.1330	.1661	.0708	.1839	.3059	.2187	.1325	.0798	.1563
.1784	.0654	-.0486	.0647	-.0384	.0694	-.0741	.1158	.2897	-.0190	-.2471	.1067	-.0037
.0137	.2440	.2230	.0261	-.0737	-.0299	-.0071	-.0568	.1865	.0571	.2989	.1061	.3144
.1626	.2112	.2690	.0109	.0233	-.0269	.1188	.1240	.0015	.2340	.2644	.1173	.1385
-.0155	.1120	.0402	-.0499	.2089	.0640	.0476	.2246	.0287	.1701	-.1600	.1820	.0154
.1802	.0234	.0853	.0804	.1363	.1830	.1364	.1225	.2907	.2163	-.0664	.0789	.0511
.2605	.0847	.0704	.0449	-.0840	-.1648	.0189	-.0097	.1756	.0241	-.0352	.5075	.0063
.0998	.2773	.1676	.0708	.0350	-.1182	.0104	-.0033	.2505	.1887	-.0653	.0644	.0096
.0642	.0297	.0743	.1509	-.0149	.0636	.0832	.2047	.0933	-.0190	.0148	.1894	-.0847
.0061	.2423	.0210	.1537	.1629	.1492	.0612	.0419	.2614	.4370	.1272	.0160	-.0574
(.2819)	.2397	.2324	.0771	-.0511	.0076	.0581	.1697	.2492	-.0072	-.0389	.1784	-.2819
.2397	(.4045)	.4045	.0883	-.1023	-.1274	.1537	.1641	.1806	.0624	-.0580	.1277	-.0120
.2324	.4045	(.4045)	-.0806	-.0376	-.0421	.2746	-.1504	.0453	-.1092	.0500	.1350	.1020
.0771	.0883	-.0806	(.2458)	-.2364	-.2324	.0555	.0278	.2030	.2458	-.0228	.1260	.0796
-.0511	-.1023	-.0376	-.2364	(.3032)	.2717	.0974	-.0511	.0898	.2963	.0116	.0218	-.0195
.0076	-.1274	-.0421	-.2324	.2717	(.2717)	.1503	.0965	.0137	.1240	-.0611	.0198	-.0362
.0581	.1537	.2746	.0555	.0974	.1503	(.2746)	.1951	.0396	.1206	-.0877	.1021	-.0469
.1697	.1641	-.1504	.0278	-.0511	.0965	.1951	(.2437)	.1457	.2136	.1684	-.1533	-.1746
.2492	.1806	.0453	.2030	.0898	.0137	.0396	.1457	(.3059)	.2783	.1126	.0566	.1221
-.0072	.0624	-.1092	.2458	.2963	.1240	.1206	.2136	.2783	(.4370)	.2819	.0251	.0285
-.0389	-.0580	.0500	-.0228	.0116	-.0611	-.0877	.1684	.1126	.2819	(.2989)	.0727	.1076
.1784	.1277	.1350	.1260	.0218	.0198	.1021	-.1533	.0566	.0251	.0727	(.5075)	-.0527
-.2819	-.0120	.1020	.0796	-.0195	-.0362	-.0469	-.1746	.1221	.0285	.1076	-.0527	(.3144)
Totals												
2.1379	3.1946	2.1411	1.1920	1.5125	1.1412	2.2936	2.4677	3.9676	3.9146	1.0229	2.4121	.7222

reciproc = .1247 64.3393 = ²(8.0212)

check = 8.0229

Third Residual Matrix. Signs not changed.

	1	2	3	4	5	6	7	8	9	10	11	12	13
	.2225	.3043	.2454	.0966	.4955	.1644	.4532	.3386	.3811	.5031	.2847	.1492	.2994
.2225	(.2537)	-.0321	-.0547	-.0419	-.0913	.0200	.0197	-.0558	.0062	.0688	.0119	-.0466	-.0538
.3043	-.0321	(.2854)	-.0003	-.0374	.0629	-.1828	.2401	-.0669	.0696	-.0586	-.2007	-.0796	-.0770
.2454	-.0547	-.0003	(.3555)	.0741	-.0644	-.0281	.3045	-.1331	-.0696	-.0557	.0276	.0027	.0188
.0966	-.0419	-.0374	.0741	(.1808)	.0539	.1191	-.2037	-.0360	-.0062	.1395	.0898	-.0903	.0477
.4955	-.0913	.0629	-.0644	.0539	(.0604)	-.0819	.0838	-.0641	.0406	.0218	-.1979	-.0960	.0608
.1644	.0200	-.1828	-.0281	+.1191	-.0819	(.2627)	-.1113	-.1888	-.1202	.0686	.1375	.1431	.0656
.4532	.0197	.2401	.3045	-.2037	.0838	-.1113	(.2103)	.1013	.0454	-.0998	-.1065	-.0422	-.0810
.3386	-.0558	-.0669	-.1331	-.0360	-.0641	-.1888	.1013	(.1544)	.0061	-.1477	-.0491	.0755	-.0330
.3811	.0062	.0696	-.0696	-.0062	.0406	-.1202	.0454	.0061	(.2408)	.0304	.0689	-.0838	.0736
.5031	.0688	-.0586	-.0557	.1395	.0218	.0686	-.0998	-.1477	.0304	(.2006)	-.0084	-.0821	.0038
.2847	.0119	-.2007	.0276	.0898	-.1979	.1375	-.1065	-.0491	.0689	-.0084	(.4264)	-.1944	.1510
.1492	-.0466	-.0796	.0027	-.0903	-.0960	.1431	-.0422	+.0755	-.0838	-.0821	-.1944	(.2550)	-.1362
.2994	-.0538	-.0770	.0188	.0477	.0608	.0656	-.0810	-.0330	.0736	.0038	.1510	-.1362	(.1465)
.5785	.1158	.1876	-.0273	.0418	-.1369	.0131	-.0757	-.0252	.1655	.1627	-.0584	-.0899	.0120
.2666	-.0769	-.0708	-.0213	-.0369	-.0843	.1346	-.1071	.0723	-.1171	.0461	.1846	.0600	-.0156
.3984	-.1591	-.0123	.0059	-.0518	.0526	.0000	.0634	.0763	-.0398	-.1770	-.0287	.2179	-.0896
.2670	-.2585	-.0193	-.0887	-.0847	.0974	-.0925	.1020	.1786	-.0616	-.0490	-.0056	.1278	-.0056
.1486	.0176	-.0684	-.0989	-.0265	.0363	.0403	-.0694	.0460	-.1211	.0652	.2084	-.0992	-.2681
.1886	.2612	.0434	.0285	-.0628	.0395	-.1592	-.0406	.0751	.0220	.0198	-.1660	.0687	.2212
.1423	.0829	.0139	-.0672	.1783	.0956	.0460	-.0944	-.0751	.0098	.1114	-.2053	-.1394	.0210
.2860	-.0135	.0362	.1821	-.0127	-.0709	-.1211	-.1367	.0220	-.0614	-.0075	-.0625	-.0323	-.0024
.3077	-.0134	.1501	.1252	.0957	.0314	.0652	-.1962	.0198	.1073	-.0323	-.0973	-.0492	.1126
.4947	.0232	-.1625	-.0331	-.0160	.0608	.2084	-.0377	-.1660	-.1598	.0418	.0347	.1767	-.0548
.4881	.0947	-.0078	-.0266	-.0748	-.0232	-.0992	-.1641	.0687	-.0159	-.0293	-.1149	.1159	-.1651
.1275	-.0050	-.0314	-.0616	-.1517	+.0693	-.2681	+.2411	.2212	-.2086	-.1305	-.0715	-.0843	-.0234
.3008	-.0708	-.1384	-.1353	-.1195	-.0693	.0572	-.0302	.0154	.0674	-.0724	.4219	.0195	.0993
.0901	-.0033	.0933	-.1603	.0380	.1117	-.0185	.2736	.1080	-.0189	.0058	-.0194	-.0039	-.1117

Group I (Tech. Sch. Boys)

	14	15	16	17	18	19	20	21	22	23	24	25	26	27
	.5785	.2666	.3984	.2670	.1486	.1886	.1423	.2860	.3077	.4947	.4881	.1275	.3008	.0901
.1158	-.0769	-.1591	-.2585	.0176	.2612	.0829	-.0135	-.0134	.0232	.0947	-.0050	-.0708	-.0033	
.1876	-.0708	-.0123	-.0193	-.0684	.0434	.0139	.0362	.1501	-.1625	-.0078	+.0314	-.1384	.0933	
-.0273	-.0213	+.0059	-.0887	-.0989	.0285	-.0672	.1821	.1252	-.0331	-.0266	-.0616	-.1353	-.1603	
.0418	-.0369	-.0518	-.0847	-.0265	-.0628	.1763	-.0127	.0957	-.0160	-.0748	-.1517	-.1195	.0380	
-.1369	-.0848	.0526	.0974	.0363	.0395	.0956	-.0709	.0314	.0608	-.0232	.0693	-.0693	.1117	
.0131	.1346	.0000	-.0925	.0403	-.0694	.0460	-.1211	.0652	.2084	-.0992	-.2681	.0572	-.0185	
-.0757	-.1071	.0634	.1020	-.0413	-.1592	-.0944	-.1367	-.1962	-.0377	-.1641	.2411	-.0302	.2736	
-.0252	.0723	.0763	.1786	-.0394	-.0406	-.0751	.0220	.0198	-.1660	.0687	.2212	.0154	.1080	
.1655	-.1171	-.0398	-.0616	-.1065	.1370	.0098	-.0614	.1073	-.1598	-.0159	-.2086	.0674	-.0189	
.1627	.0461	-.1770	-.0490	.0056	.0414	.1114	-.0075	-.0323	.0418	-.0293	-.1305	-.0724	.0058	
-.0584	.1846	-.0287	-.0056	.0026	-.1377	-.2053	-.0625	-.0973	.0347	-.1149	-.0715	.4219	-.0194	
-.0899	.0600	.2179	.1278	.0486	.0069	-.1394	-.0323	-.0492	.1767	.1159	-.0843	.0195	-.0039	
.0120	-.0156	-.0896	-.0056	.1064	-.0714	.0210	-.0024	.1126	-.0548	-.1651	-.0234	.0993	-.1117	
(.1190)	-.1481	.0118	-.1335	.0677	.0538	.0669	-.1043	-.1361	-.0248	.1546	.0534	-.1580	-.1095	
-.1481	(.2108)	.1335	.1612	.4375	-.1014	-.0303	-.0182	.0877	.1173	-.1373	-.0729	.0982	-.3059	
.0118	.1335	(.2458)	.2981	.0291	-.1774	-.1841	.0397	.0415	-.0165	-.1321	-.1088	.0079	-.0479	
-.1335	.1612	.2981	(.3332)	-.1203	-.0879	-.0801	.1982	-.2325	-.0868	-.2395	.0159	.0547	.0779	
.0677	.0375	.0291	-.1203	(.2237)	-.2644	-.2535	.0130	-.0179	.1295	.1733	-.0417	.0813	.0662	
.0538	-.1014	-.1774	-.0879	-.2644	(.2676)	.2449	.0435	-.1091	-.0035	.2042	-.0125	-.0349	-.0365	
.0669	-.0303	-.1841	-.0801	.2535	.2449	(.2515)	.1096	.0527	-.0567	.0545	-.0792	-.0230	-.0490	
-.1043	-.0182	.0397	.1982	.0130	.0435	.1096	(.1928)	.1071	-.1019	-.0190	-.1242	.0161	-.0727	
-.1361	.0877	.0415	-.2325	-.0179	-.1091	.0527	.1071	(.1490)	-.0065	.0634	.1292	-.2458	-.2023	
-.0248	.1173	-.0165	-.0868	.1295	-.0035	-.0567	-.1019	-.0065	(.0612)	.0368	.0495	-.0922	.0775	
.1546	-.1373	-.1321	-.2395	.1733	.2042	.0545	-.0190	.0634	.0368	(.1987)	.2197	-.1217	-.0155	
.0534	-.0729	-.1088	.0159	-.0417	-.0125	-.0792	-.1242	.1292	.0495	.2197	(.2826)	.0343	.0961	
-.1580	.0982	.0079	.0547	.0813	-.0349	-.0230	.0161	-.2458	-.0922	-.1217	.0343	(.4170)	-.0798	
-.1095	-.3059	-.0479	.0779	.0662	-.0365	-.0490	-.0727	-.2023	.0775	-.0155	.0961	-.0798	(.3063)	

1	2	3	4	5	6	7	8	9	10	11	12	13
(.2612)	-.0321	.0547	-.0419	-.0913	.0200	-.0197	.0558	.0062	.0688	-.0119	.0466	-.0538
-.0321	(.2401)	.0003	-.0374	.0629	-.1828	-.2401	.0669	.0696	-.0586	.2007	.0796	-.0770
.0547	.0003	(.3045)	-.0741	.0644	.0281	.3045	-.1331	.0696	.0557	.0276	.0027	-.0188
-.0419	-.0374	-.0741	(.2037)	.0539	.1191	.2037	.0360	-.0062	.1395	-.0898	.0903	.0477
-.0913	.0629	.0644	.0539	(.1979)	-.0819	-.0838	.0641	.0406	.0218	.1979	.0960	.0608
.0200	-.1828	.0281	.1191	-.0819	(.2681)	.1113	.1888	-.1202	.0686	-.1375	-.1431	.0656
-.0197	-.2401	.3045	.2037	-.0838	.1113	(.3045)	.1013	-.0454	.0998	-.1065	-.0422	.0810
.0558	.0669	-.1331	.0360	.0641	.1888	.1013	(.2212)	-.0061	.1477	-.0491	.0755	.0330
.0062	.0696	.0696	-.0062	.0406	-.1202	-.0454	-.0061	(.2086)	.0304	-.0689	.0838	.0736
.0688	-.0586	.0557	.1395	.0218	.0686	.0998	.1477	.0304	(.1770)	.0084	.0821	.0038
-.0119	.2007	.0276	-.0898	.1979	-.1375	-.1065	-.0491	-.0689	.0084	(.4219)	-.1944	-.1510
.0466	.0796	.0027	.0903	.0960	-.1431	-.0422	.0755	.0838	.0821	-.1944	(.2179)	.1362
-.0538	-.0770	-.0188	.0477	.0608	.0656	.0810	.0330	.0736	.0038	-.1510	.1362	(.1651)
.1158	.1876	.0273	.0418	-.1369	.0131	-.0757	.0252	.1655	.1627	.0584	.0899	.0120
.0769	.0708	-.0213	.0369	.0848	-.1346	-.1071	.0723	.1171	-.0461	.1846	.0600	.0156
.1591	.0123	.0059	.0518	-.0526	+.0000	.0634	.0763	.0398	.1770	-.0287	.2179	.0896
.2585	.0193	-.0887	.0847	-.0974	.0925	.1020	.1786	.0616	.0490	-.0056	.1278	.0056
-.0176	.0684	-.0989	.0265	-.0363	-.0403	-.0413	-.0394	.1065	-.0056	.0026	.0486	-.1064
.2612	.0434	-.0285	-.0628	-.0395	-.0694	.1592	.0406	.1370	.0414	-.1377	-.0069	-.0714
.0829	.0139	.0672	.1763	.0956	.0460	.0944	.0751	.0098	.1114	.2053	.1394	.0210
.0135	-.0362	.1821	.0127	.0709	.1211	-.1367	.0220	.0614	.0075	-.0625	-.0323	.0024
-.0134	.1501	-.1252	.0957	.0314	.0652	.1962	-.0198	.1073	-.0323	.0973	.0492	.1126
-.0232	.1625	-.0331	.0160	-.0608	-.2084	-.0377	-.1660	.1598	-.0418	.0347	.1767	.0548
.0947	-.0078	.0266	-.0748	-.0232	-.0992	.1641	-.0687	-.0159	-.0293	.1149	-.1159	-.1651
.0050	-.0314	-.0616	.1517	-.0693	.2681	.2411	.2212	.2086	.1305	-.0715	-.0843	.0234
.0708	.1384	-.1353	.1195	.0693	-.0572	-.0302	.0154	-.0674	.0724	.4219	.0195	-.0993
.0033	-.0933	-.1603	-.0380	-.1117	.0185	.2736	.1080	.0189	-.0058	-.0194	-.0039	.1117

Totals	1.3501	.7901	.2423	1.2825	.4066	.2195	1.6851	1.3428	1.4456	1.4360	1.1171	1.2167	.3727
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14	15	16	17	18	19	20	21	22	23	24	25	26	27
11'17'12'15'26'23'25'18'8'16'7'3'21'27													
.1158	+.0769	.1591	.2585	-.0176	.2612	.0829	.0135	-.0134	-.0232	.0947	.0050	.0708	.0033
.1876	.0708	.0123	.0193	.0684	.0434	.0139	-.0362	.1501	.1625	-.0078	-.0314	.1384	-.0933
.0273	-.0213	.0059	-.0887	-.0989	-.0285	.0672	.1821	-.1252	-.0331	.0266	-.0616	-.1353	-.1603
.0418	.0369	.0518	.0847	.0265	-.0628	.1763	.0127	.0957	.0160	-.0748	.1517	.1195	-.0380
-.1369	.0848	-.0526	-.0974	-.0363	.0395	.0956	.0709	.0314	-.0608	-.0232	-.0693	.0693	-.1117
.0131	-.1346	+.0000	.0925	-.0403	-.0694	.0460	.1211	.0652	-.2084	-.0992	.2681	-.0572	.0185
.0757	-.1071	.0634	.1020	-.0413	.1592	.0944	-.1367	.1962	-.0377	.1641	.2411	-.0302	.2736
.0252	.0723	.0763	.1786	-.0394	.0406	.0751	.0220	-.0198	-.1660	-.0687	.2212	.0154	.1080
.1655	.1171	.0398	.0616	.1065	.1370	.0098	.0614	.1073	.1598	-.0159	.2086	-.0674	.0189
.1627	-.0461	.1770	.0490	-.0056	.0414	.1114	.0075	-.0323	-.0418	-.0293	.1305	.0724	-.0058
.0584	.1846	-.0287	-.0056	.0026	.1377	.2053	-.0625	.0973	.0347	.1149	-.0715	.4219	-.0194
.0899	.0600	.2179	.1278	.0486	-.0069	.1394	-.0323	.0492	.1767	-.1159	-.0843	.0195	-.0039
.0120	.0156	.0896	.0056	-.1064	-.0714	.0210	.0024	.1126	.0548	-.1651	.0234	-.0993	.1117
(.1876)	.1481	-.0118	.1335	-.0677	.0538	.0669	.1043	-.1361	.0248	.1546	-.0534	.1580	.1095
.1481	(.3059)	.1335	.1612	.0375	.1014	.0303	-.0182	-.0877	.1173	.1373	-.0729	.0982	-.3059
-.0118	.1335	(.2981)	.2981	.0291	.1774	.1841	.0397	-.0415	-.0165	-.1321	-.1088	.0079	-.0479
.1335	.1612	.2981	(.2981)	-.1203	.0879	.0801	.1982	.2325	-.0868	.2395	.0159	.0547	.0779
-.0677	.0375	.0291	-.1203	(.2644)	.2644	.2535	.0130	.0179	.1295	-.1733	-.0417	.0813	.0662
.0538	.1014	.1774	.0879	.2644	(.2644)	.2449	-.0435	-.1091	.0035	.2042	.0125	.0349	.0365
.0669	.0303	.1841	.0101	.2535	.2449	(.2535)	-.1096	.0527	.0567	.0545	.0792	.0230	.0490
.1043	-.0182	.0397	.1982	.0130	-.0435	-.1096	(.1982)	-.1071	-.1019	.0190	-.1242	.0161	-.0727
-.1361	-.0877	-.0415	.2325	.0179	-.1091	.0527	-.1071	(.2325)	.0065	.0634	-.1292	.2458	.2023
.0248	.1173	-.0165	-.0868	.1295	.0035	.0567	-.1019	.0065	(.2084)	-.0368	.0495	-.0922	.0775
.1546	.1373	.1321	.2395	-.1733	.2042	.0545	.0190	.0634	-.0368	(.2395)	-.2197	.1217	.0155
.0534	-.0729	-.1088	.0159	-.0417	.0125	.0792	-.1242	-.1292	.0495	-.2197	(.2681)	.0343	.0961
.1580	.0982	.0079	.0547	.0813	.0349	.0230	.0161	.2458	-.0922	.1217	.0343	(.4219)	-.0798
.1095	-.3059	-.0479	.0779	.0662	.0365	.0490	-.0727	.2023	.0775	.0155	.0961	-.0798	(.3059)

1.7102	1.1959	1.8853	2.4584	.6206	1.9542	2.4571	.2372	1.1572	3.730	.7519	.7372	1.6636	.6317	30.7406
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Recipro. = 18037
 Check = 5.5446

Group I

Fourth Residual Matrix. Signs not changed.

1	2	3	4	5	6	7	8	9	10	11	12	13
.2435	.1425	.0437	.2313	.0733	.0396	.3039	.2422	.2607	.2590	.2015	.2195	.0672

14	15	16	17	18	19	20	21	22	23	24	25	26	27
.3085	.2157	.3401	.4434	.1119	.3525	.4432	.0428	.2087	.0673	.1356	.1330	.3001	.1139

.2435	(.2020)	-.0668	.0441	-.0982	-.1091	.0103	-.0937	-.0032	-.0573	.0057	-.0610	-.0069	-.0702
.1425	-.0668	(.2198)	-.0059	-.0714	.0524	-.1884	-.2834	.0324	.0325	-.0955	.1720	.0483	-.0866
.0437	.0441	-.0059	(.3026)	-.0842	.0612	.0264	.2912	-.1437	.0582	.0444	.0188	-.0069	-.0217
.2313	-.0982	-.0714	-.0842	(.1502)	.0369	.1099	.1334	-.0200	-.0665	.0796	-.1364	.0395	.0321
.0733	-.1091	.0524	.0612	.0369	(.1925)	-.0848	-.1061	.0463	.0215	.0028	.1831	.0799	.0559
.0396	.0103	-.1884	.0264	.1099	-.0848	(.2665)	.0993	.1792	-.1305	.0583	-.1455	-.1518	.0629
.3039	-.0937	-.2834	.2912	.1334	-.1061	.0993	(.2121)	.0277	-.1246	.0211	-.1677	-.1089	.0606
.2422	-.0032	.0324	-.1437	-.0200	.0463	.1792	.0277	(.1625)	-.0692	.0850	-.0979	.0223	.0167
.2607	-.0573	.0325	.0582	-.0665	.0215	-.1305	-.1246	-.0692	(.1406)	-.0371	-.1214	.0266	.0561
.2590	.0057	-.0955	.0444	.0796	.0028	.0583	.0211	.0850	-.0371	(.1099)	-.0438	.0252	-.0136
.2015	-.0610	.1720	.0188	-.1364	.1831	-.1455	-.1677	-.0979	-.1214	-.0438	(.3813)	-.2386	-.1645
.2195	-.0069	.0483	-.0069	.0395	.0799	-.1518	-.1089	.0223	.0266	.0252	-.2386	(.1697)	.1214
.0672	-.0702	-.0866	-.0217	.0321	.0559	.0629	.0606	.0167	.0561	-.0136	-.1645	.1214	(.1606)
.3085	.0407	.1436	.0138	-.0296	-.1595	.0009	-.0181	-.0495	.0851	.0828	-.0038	.0222	-.0087
.2157	.0244	.0401	-.0307	-.0120	.0690	-.1431	-.1726	.0201	.0609	-.1020	.1411	.0127	.0011
.3401	.0763	-.0362	-.0090	-.0269	-.0775	-.0135	-.0400	-.0061	-.0489	.0889	-.0972	.1432	.0667
.4434	.1505	-.0439	-.1081	-.0179	-.1299	.0749	-.0327	.0712	-.0540	-.0658	-.0949	.0305	-.0242
.1119	-.0448	.0525	-.1038	.0006	-.0445	-.0447	-.0753	-.0665	.0773	-.0346	-.0200	.0240	-.1139
.3525	.1754	-.0068	-.0439	-.1443	.0137	-.0833	.0521	-.0447	.0451	-.0499	.0667	-.0843	-.0951
.4432	-.0250	-.0493	.0478	.0738	.0631	.0284	-.0403	-.0323	-.1058	-.0034	.1160	.0421	-.0088
.0428	.0031	-.0423	.1802	.0028	.0678	.1194	-.1497	.0116	.0502	-.0036	-.0711	-.0417	-.0005
.2087	-.0642	.1204	-.1343	.0474	.0161	.0569	.1328	-.0703	.0529	-.0863	.0552	.0034	.0986
.0673	-.0396	.1529	-.0360	.0004	-.0657	-.2111	-.0581	-.1823	.1423	-.0592	.0211	.1619	.0503
.1356	.0617	-.0271	.0207	-.1062	-.0331	-.1046	.1229	-.1015	-.0513	-.0644	.0876	-.1457	-.1742
.1330	-.0274	-.0503	-.0674	.1209	-.0790	.2628	.2007	.1890	.1739	.0961	-.0983	-.1135	.0145
.3001	-.0023	.0956	-.1484	.0501	.0473	-.0691	-.1214	-.0575	-.1456	-.0053	.3614	-.0464	-.1195
.1139	-.0244	-.1095	-.1653	-.0643	-.1200	.0140	.2390	.0804	-.0108	-.0353	-.0423	-.0289	.1040

.0407	.0244	.0763	.1505	-.0448	.1754	-.0250	.0031	-.0642	-.0396	.0617	-.0274	-.0023	-.0244
.1436	.0401	-.0362	-.0439	.0525	-.0068	-.0493	-.0423	.1204	.1529	-.0271	-.0503	.0956	-.1095
.0138	-.0307	-.0090	-.1081	-.1038	-.0439	.0478	.1802	-.1343	-.0360	.0207	-.0674	-.1484	-.1653
-.0296	-.0120	-.0269	-.0179	.0006	-.1443	.0738	.0028	.0474	.0004	-.1062	.1209	.0501	-.0643
-.1595	.0690	-.0775	-.1299	-.0445	.0137	.0631	.0678	.0161	-.0657	-.0331	-.0790	.0473	-.1200
.0009	-.1431	-.0135	.0749	-.0447	-.0833	.0284	.1194	.0569	-.2111	-.1046	.2628	-.0691	.0140
-.0181	-.1726	-.0400	-.0327	-.0753	.0521	-.0403	-.1497	.1328	-.0581	.1229	.2007	-.1214	.2390
-.0495	.0201	-.0061	.0712	-.0665	-.0447	-.0323	.0116	-.0703	-.1823	-.1015	.1890	-.0573	.0804
.0851	.0609	-.0489	-.0540	.0773	.0451	-.1058	.0502	.0529	.1423	-.0513	.1739	-.1456	-.0108
.0828	-.1020	.0889	-.0658	-.0346	-.0499	-.0034	-.0036	-.0863	-.0592	-.0644	.0961	-.0053	-.0353
-.0038	.1411	-.0972	-.0949	-.0200	.0667	.1160	-.0711	.0552	.0211	.0876	-.0983	.3614	-.0423
.0222	.0127	.1432	.0305	.0240	-.0843	.0431	-.0417	.0034	.1619	-.1457	-.1135	-.0464	-.0289
-.0087	.0011	.0667	-.0242	-.1139	-.0951	-.0088	-.0005	.0986	.0503	-.1742	.0145	-.1195	.1040
(.0924)	.0815	-.1167	-.0033	-.1022	-.0550	-.0698	.0911	-.2005	.0040	.1128	-.0944	.0654	.0744
.0815	(.2593)	.0601	.0655	.0134	.0254	-.0663	-.0274	-.1327	.1028	.1081	-.1016	.0335	-.3305
-.1167	.0601	(.1824)	.1473	-.0090	.0575	.0334	.0251	-.1125	-.0394	.0860	-.1540	-.0942	-.0866
-.0033	.0655	.1473	(.1015)	-.1699	-.0684	-.1164	.1792	.1400	-.1166	.1794	-.0431	-.0784	.0274
-.1022	.0134	-.0090	-.1699	(.2519)	.2249	.2039	.0082	-.0055	.1220	-.1885	-.0566	.0477	.0535
-.0550	.0254	.0575	-.0684	.2249	(.1401)	.0887	-.0586	-.1827	-.0202	.1564	-.0344	-.0709	-.0037
-.0698	-.0663	.0334	-.1164	.2039	.0887	(.0571)	-.2286	-.0398	.0269	-.0056	.0203	-.1100	-.0015
.0911	-.0274	.0251	.1792	.0082	-.0586	-.1286	(.1964)	-.1160	-.1048	.0132	-.1299	.0033	-.0776
-.2005	-.1327	-.1125	.1400	-.0055	-.1827	-.0398	-.1160	(.1889)	-.0075	.0351	-.1569	.1832	.1785
.0040	.1028	-.0394	-.1166	.1220	-.0202	.0269	-.1048	-.0075	(.2039)	-.0459	.0405	-.1124	.0698
.1128	.1081	.0860	.1794	-.1885	.1564	-.0056	.0132	.0351	-.0459	(.2211)	-.2377	.0810	.0001
-.0944	-.1016	-.1540	-.0431	-.0566	-.0344	-.0203	-.1299	-.1569	.0405	-.2377	(.2504)	-.0056	.0809
.0654	.0335	-.0942	-.0784	.0477	-.0709	-.1100	.0033	.1832	-.1124	.0810	-.0056	(.3318)	-.1140
.0744	-.3305	-.0866	.0274	.0535	-.0037	-.0015	-.0776	.1785	.0698	.0001	.0809	-.1140	(.2929)

Fourth Residual Matrix Signs Changed

Fifth Factor.

	1	2	3	4	5	6	7	8	9	10	11	12	13
.1876	(.1754)	-.0668	.0441	.0982	.1091	-.0103	.0937	-.0032	-.0573	-.0057	.0610	.0069	.0702
.2710	.0668	(.2834)	-.0059	.0714	-.0524	.1884	-.2834	-.0324	.0325	.0955	.1720	-.0483	.0866
.0559	.0441	-.0059	(.2912)	.0842	-.0612	-.0264	-.2912	.1437	.0582	-.0444	.0188	.0069	.0217
.2802	.0982	.0714	.0842	(.1443)	.0369	.1099	.1334	-.0200	.0665	.0796	.1364	.0395	.0321
.0376	.1091	-.0524	-.0612	.0369	(.1831)	-.0848	-.1061	.0463	-.0215	.0028	-.1831	.0799	.0559
.3424	.0103	.1884	-.0264	.1099	-.0848	(.2628)	.0993	.1792	.1305	.0583	.1455	-.1318	.0629
.3933	.0937	.2834	-.2912	.1334	-.1061	.0993	(.2912)	.0277	.1246	.0211	.1677	-.1089	.0606
.2650	.0032	-.0324	.1437	-.0200	.0463	.1792	.0277	(.1823)	.0692	.0850	.0979	.0223	.0167
.0876	.0573	.0325	.0582	.0665	-.0215	.1305	.1246	.0692	(.1739)	.0371	-.1214	-.0266	-.0561
.1276	.0057	.0955	-.0444	.0796	.0028	.0583	.0211	.0850	.0371	(.1020)	.0438	.0252	-.0136
.2932	.0610	.1720	.0188	.1364	-.1831	.1455	.1677	.0979	-.1214	.0438	(.3614)	.2386	.1645
.0514	.0069	-.0483	.0069	.0395	.0799	-.1518	-.1089	.0223	-.0266	.0252	.2386	(.2386)	.1214
.2708	.0702	.0866	.0217	.0321	.0559	.0629	.0606	.0167	-.0561	-.0136	.1645	.1214	(.1742)
.1916	.0407	.1436	.0138	.0296	.1595	-.0009	.0181	.0495	.0851	-.0828	-.0038	-.0222	.0087
.3780	.0244	.0401	-.0307	.0120	-.0690	.1431	.1726	-.0201	.0609	.1020	.1411	-.0127	-.0011
.0648	.0763	-.0362	-.0090	.0269	.0775	.0135	.0400	.0061	-.0489	-.0889	-.0972	-.0432	-.0667
.0475	.1505	-.0439	-.1081	.0179	.1299	-.0749	.0327	-.0712	-.0540	.0658	-.0949	-.0305	.0242
.0556	.0448	.0525	-.1038	-.0006	.0445	.0447	.0753	.0665	.0773	.0346	-.0200	-.0240	.1139
.2322	.1754	-.0068	-.0439	.1443	-.0137	.0833	-.0521	.0447	.0451	.0499	.0667	.0843	.0951
.0886	.0250	.0493	-.0478	.0738	.0631	.0284	-.0403	-.0323	.1058	-.0034	-.1160	.0421	-.0088
.1666	.0031	-.0423	.1802	-.0028	-.0678	-.1194	.1497	-.0116	.0502	.0036	-.0711	.0417	.0005
.1427	.0642	-.1204	.1343	.0474	.0161	.0569	.1328	-.0703	-.0529	-.0863	-.0552	.0034	.0986
.0904	.0396	.1529	-.0360	-.0004	.0657	.2111	.0581	.1823	.1423	.0592	.0211	-.1619	-.0503
.3600	.0617	-.0271	.0207	.1062	.0331	.1046	.1229	.1015	-.0513	.0644	.0876	.1457	.1742
.3396	.0274	.0503	.0674	.1209	-.0790	.2628	.2007	.1890	-.1739	.0961	.0983	-.1135	.0145
.1456	-.0023	.0956	-.1484	-.0501	-.0473	.0691	.1214	.0573	-.1456	.0053	.3614	.0464	.1195
.2886	.0244	.1095	.1653	-.0643	-.1200	.0140	.2390	.0804	.0108	-.0353	.0423	-.0289	.1040
Totals	.9861	1.4245	.2937	1.4731	.1975	1.7998	2.0674	1.3929	.4605	.6709	1.5414	.2704	1.4234

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Totals
.0407	.0244	.0763	.1505	.0448	.1754	.0250	.0031	.0642	-.0396	.0617	.0274	-.0023	.0244	.9861	
.1436	.0401	-.0362	-.0439	.0525	-.0068	.0493	-.0423	-.1204	.1529	-.0271	.0503	.0956	.1095	1.4245	
.0138	-.0307	-.0090	-.1081	-.1038	-.0439	-.0478	.1802	.1343	-.0360	.0207	.0674	-.1484	.1653	.2937	
.0296	-.0120	+.0269	+.0179	+.0006	+.1443	.0738	-.0028	.0474	-.0004	.1062	.1209	-.0501	-.0643	1.4731	
.1595	-.0690	.0775	.1299	.0445	-.0137	.0631	-.0678	.0161	.0657	.0331	-.0790	-.0473	-.1200	.1975	
-.0009	.1431	.0135	-.0749	.0447	.0833	.0284	-.1194	.0569	.2111	.1046	.2628	.0691	.0140	1.7998	
.0181	.1726	.0400	.0327	.0753	-.0521	-.0403	.1497	.1328	.0581	.1229	.2007	.1214	.2390	2.0674	
.0495	-.0201	.0061	-.0712	.0665	.0447	-.0323	-.0116	-.0703	.1823	.1015	.1890	.0573	.0804	1.3929	
.0851	.0609	-.0489	-.0540	.0773	.0451	.1058	.0502	-.0529	.1423	-.0513	-.1739	-.1456	.0108	.4605	
-.0828	.1020	-.0889	.0658	.0346	.0499	-.0034	.0036	-.0863	.0592	.0644	.0961	.0053	-.0353	.6709	
-.0038	.1411	-.0972	-.0949	-.0200	.0667	-.1160	-.0711	-.0552	.0211	.0876	.0983	.3614	.0423	1.5414	
-.0222	-.0127	-.1432	-.0305	-.0240	.0843	.0421	.0417	.0034	.1619	.1457	-.1135	.0464	-.0289	.2704	
.0087	-.0011	-.0667	.0242	.1139	.0951	-.0088	.0005	.0986	-.0503	.1742	.0145	.1195	.1040	1.4234	
(.2005)	.0815	-.1167	-.0033	-.1022	-.0550	.0698	.0911	.2005	.0040	.1128	.0944	.0654	-.0744	1.0073	
.0815	(.3305)	.0601	.0655	.0134	.0254	.0663	-.0274	.1327	.1028	.1081	.1016	.0335	.3305	1.9871	
-.1167	.0601	(.1540)	.1473	-.0090	.0575	-.0334	.0251	.1125	-.0394	.0860	.1540	-.0942	.0866	.3406	
-.0033	.0655	.1473	(.1794)	-.1699	-.0684	.1164	.1792	-.1400	-.1166	.1794	.0431	-.0784	-.0274	.2498	
-.1022	.0134	-.0090	-.1699	(.2249)	.2249	-.2039	.0082	.0055	.1220	-.1835	.0566	.0477	-.0535	.2923	
-.0550	.0254	.0575	-.0684	.2249	(.2249)	-.0887	-.0586	.1827	-.0202	.1564	.0344	-.0709	.0037	1.2204	
.0698	.0663	-.0334	.1164	-.2039	-.0887	(.2039)	.1286	-.0398	-.0269	.0056	.0203	.1100	-.0015	.4656	
.0911	-.0274	.0251	.1792	.0082	-.0586	.1286	(.1802)	.1160	-.1048	.0132	.1299	.0033	.0776	.8756	
.2005	.1327	.1125	-.1400	.0055	.1827	-.0398	.1160	(.2005)	.0075	-.0351	-.1569	-.1832	.1785	.7500	
.0040	.1028	-.0394	-.1166	+.1220	-.0202	-.0269	-.1048	.0075	(.2111)	-.0459	-.0405	-.1124	-.0698	.4754	
.1128	.1081	.0860	.1794	-.1835	.1564	.0056	.0132	-.0351	-.0459	(.2377)	.2377	.0810	-.0001	1.8925	
.0944	.1016	.1540	.0431	.0566	.0344	.0203	.1299	-.1569	-.0405	.2377	(.2628)	.0056	.0809	1.7849	
.0654	.0335	-.0942	-.0784	.0477	-.0709	.1100	.0033	-.1832	-.1124	.0810	.0056	(.3614)	.1140	.7651	
-.0744	.3305	.0866	-.0274	-.0535	.0037	-.0015	.0776	.1785	-.0698	-.0001	.0809	.1140	(.3305)	1.5168	
Totals	1.0073	1.9871	.3406	.2498	.2923	1.2204	.4656	.8756	.7500	.4754	1.8925	1.7849	.7651	1.5168	27.6250

Recip = .19024

27.6250 - 75 2563)

APPENDIX II.

REYBURN & TAYLOR ROTATION.

Appendix 2.

RAYBURN & TAYLOR First Rotation

Test.	I	II	III	IV	V
9	.5741	.3209	-4532	.3039	.3933
7	.6625	.2489	-3386	.2422	.2650
8	.6621	.2018	-3811	-2607	.0876

Normal.	1.8987	.7716	-1.1729	.2854	.7459
---------	--------	-------	---------	-------	-------

S.Sq = 6.2139

6.2139 = (2.4928)²

recip = .40116

.7617	.2575	.	.4601	.3764
.3095	.1046	.	.1869	-9264
-.4705	-1591	.	.8679	.
.1145	-3387	-9341	.	.
.2992	-8849	.3575	.	.

	I _o	II _o	III _o	IV _o	V _o	h ²
1	.2690	-.6696	-2225	-2435	.1876	.6647
2	.3556	-6297	-3043	-1425	.2710	.7093
3	.4346	-5540	.2454	-0437	-0559	.5610
4	.3326	-4887	.0966	.2313	.2802	.4908
5	.2165	-2521	.4955	.0733	.0376	.3627
6	.4287	-2689	-1644	-0396	-3424	.4019
7	.5741	.3209	-4532	.3039	.3933	.8850
8	.6625	.2489	-3386	.2422	.2650	.7444
9	.6621	.2018	-3811	-2607	.0876	.7000
10	.3928	.2814	-5031	-2590	-1276	.5699
11	.1581	.2513	.2847	-2015	.2932	.2958
12	.6114	.2481	-1492	.2195	.0514	.5084
13	.4445	.2446	.2994	.0672	.2708	.4249
14	.4729	.2026	.5785	.3085	-1916	.7312
15	.6058	.2694	-2666	.2157	-3780	.7001
16	.3829	.1067	.3984	-3401	.0648	.4366
17	.3979	.1421	.2670	-4434	.0475	.4487
18	.4621	.3415	-1486	.1119	-0556	.3679
19	.5127	.1310	.1886	.3525	-2322	.4938
20	.3430	.1433	-1423	-4432	-0886	.3627
21	.3859	-2630	-2860	.0428	-1666	.3295
22	.4723	-1848	-3077	-2087	-1427	.4158
23	.2763	.1180	.4947	-0673	.0904	.3477
24	.4378	-1128	.4881	.1356	-3600	.5906
25	.2077	.2203	.1275	-1330	-3396	.2409
26	.2500	.3939	-3008	.3001	-1456	.4194
27	.5537	-3469	-0901	.1139	.2886	.5313

.7617	.2575
.3095	.1046
-.4705	-1591
.1145	-3387
.2992	-8849

Group I. TECHNICAL SCHOOL BOYS.

			I	II	III	IV	V	h^2
			.1306	-0489	.2945	-1945	.7216	6647
			.2839	-1174	.2300	-2182	.7172	7093
			.0224	.0792	.0208	.3094	.6768	5610
			.1670	-3071	-1159	.1455	.5779	4908
			-1266	-1076	-0550	.4825	.3150	3627
.	.4601	.3764	.2137	.4248	-0854	.0043	.4105	4019
.	.1869	-9264	.9023	-1975	-1433	-0692	-0812	8850
.	.8679	.	.8480	-0660	-1315	.0575	.0188	7444
-9341	.	.	.7424	.2630	.2748	.0116	.0623	.6999
.3575	.	.	.5552	.4113	.1963	-2033	-1128	.5700
			.1289	-.1695	.2930	.3668	-1733	.2958
			.6532	.0873	-.1867	.1982	.0003	.5084
			.3621	-1700	.0340	.5101	-0593	.4249
			.1287	.1160	-3567	.7575	-0097	.7312
			.5819	.4880	-3366	.0977	-0215	.7001
			.1177	.1042	.3409	.5419	.0453	.4366
			.1849	.1830	.4312	.4414	.0181	.4488
			.5237	.1896	-1244	.1475	-1424	.3679
			.3132	.2018	-4123	.4241	.0716	.4938
			.2953	.3545	.3823	.0611	-0037	.3627
			.3021	.2503	-0995	-1198	.3889	.3294
			.3807	.3482	.1439	-0843	.3490	.4158
			-.0336	-0524	.0952	.5785	.0053	.3476
			-0232	.2959	.2554	.6040	.2693	.5906
			.0496	.4018	.0028	.2474	-1259	.2409
			.4447	.1806	-3324	-0724	-2708	.4194
			.4562	-1733	-0032	.1117	.5298	.5313

RAYBURN & TAYLOR Second Rotation

West.

14	.7575	.1160	-3567	-0097
16	.5101	-1700	0340	-0593
17	.6040	2952	2554	2693
18	.5785	-0524	0952	0053

2.4501	1888	0279	2056
9935	0766	0113	0834

.9935	.0766	-0113	-0834
.0766	-9935	0834	-0113
.0113	0834	9935	.0766
.0834	-0113	-0766	9935

IV

II

III

V

h²

1	-1945	-0489	.2945	.7216	.6477			
2	-2182	-1174	.2300	.7172	.6287			
3	.3094	.0792	.0208	.6768	.5606			
4	.1455	-3071	-1159	.5779	.4630			
5	.4825	-1076	-0550	.3150	.3466			
6	.0043	.4248	-0854	.4105	.3563	.9935	.0766	-0113
7	.0575	-0660	-1315	.0188	.0253	.0766	-9935	.0834
8	.0116	.2630	.2748	.0623	.1487	.0113	.0834	.9935
9	-0692	-1975	-1433	-0812	.0709	.0834	-0113	-0766
10	-2033	.4113	.1963	-1128	.2617			
11	.4414	.1830	.4312	.0181	.4146			
12	.5419	.1042	.3409	.0453	.4228			
13	-0724	.1806	-3324	-2708	.2217			
14	.7575	.1160	-3567	-0097	.7146			
15	.3668	-1695	.2930	-1733	.2791			
16	.5101	-1700	.0340	-0593	.2938			
17	.6040	.2959	.2554	.2693	.5901			
18	.5785	-0524	.0952	.0053	.3465			
19	.2474	.4018	.0028	-1259	.2385			
20	.1982	.0873	-1867	.0003	.0818			
21	.0977	.4880	-3366	-0215	.3615			
22	.1475	.1896	-1244	-1424	.0935			
23	.4241	.2018	-4123	.0716	.3957			
24	.0611	.3545	3823	-0037	.2756			
25	-1198	.2503	-0995	.3889	.2381			
26	-0843	.3482	.1439	.3490	.2709			
27	.1117	-1733	-0032	.5298	.3232			

Group 1. TECHNICAL SCHOOL BOYS.

	IV	II	III	V	h^2
	-1335	.0530	.2354	.7562	.6478
	-1633	.1110	.1662	.7497	.6287
	.3701	-0609	-0281	.6473	.5605
	.1679	.3001	-1867	.5566	.4629
	.4968	.1357	-0932	.2697	.3466
-0834	.0701	-4335	-0809	.3961	.3563
-0113	.0521	.0588	-1382	.0045	.0253
.0766	.0400	-2382	.2900	.0790	.1487
.9935	-0903	.1799	-1512	-0837	.0704
	-1776	-4066	.2403	-0847	.2618
	.4589	-1123	.4373	-0121	.4146
	.5544	-0341	.3378	-0247	.4232
	-0844	-2096	-2936	-2905	.2217
	.7566	-0869	-3525	-1015	.7146
	.3403	.2229	.2861	-1784	.2791
	.4892	.2115	.0184	-0969	.2938
	.6481	-2295	.2510	.2334	.5901
	.5722	.1043	.0833	-0399	.3468
	.2661	-3786	.0431	-1500	.2385
	.2015	-0871	-1805	-0315	.0818
	.1288	-5052	-2932	-0608	.3615
	.1478	-1858	-0985	-1655	.0935
	.4381	-2032	-4031	.0019	.3957
	.0919	-3115	.4090	.0165	.2756
	-0685	-2705	-1064	.3859	.2381
	-0263	-3443	.1462	.3609	.2709
	.1418	.1745	-0595	.5187	.2321

Note: The order of Tests are changed in this table so as to correspond with that of the other groups.

RAYBURN & TAYLOR Third Rotation

Tests.	V	II	III
1	.7562	.0530	2354
2	.7497	.1110	1662
3	.6473	-0609	-0281
4	.5566	3001	-1867
5	.3961	-4335	-0809

	3.1059	-0303	.1059
Nor- mal	.9995	-0097	.0341

$$5.59 = 9.6587$$

$$= (3.1079)^2$$

$$\text{Recip} = .3218$$

	.9995	.0341	+.0010
	-0097	.00003	1.000
	.0341	-9994	.

	V	II	III	h^2
1	.7562	.0530	.2354	.6301
2	.7497	.1110	.1662	.6012
3	.6473	-0609	-0281	.4235
4	.5566	.3001	-1867	.4347
5	.2697	.1357	-0932	.0998
6	.3961	-4335	-0809	.3514
7	.0045	.0588	-1382	.0226
8	.0790	-2382	.2900	.1471
9	-0837	.1799	-1512	.0622
10	-0847	-4066	.2403	.2302
11	-0121	-1123	.4373	.2040
12	.0247	-0341	.3378	.1159
13	-2905	-2096	-2936	.2145
14	-1015	-0869	-3525	.1421
15	-1784	.2229	.2861	.1634
16	-0969	.2115	.0184	.0545
17	2334	-2295	.2510	.1701
18	-0399	.1043	.0833	.0194
19	-1500	-3786	.0431	.1677
20	-0315	-0871	-1805	.0411
21	-0608	-5052	-2932	.3449
22	-1655	-1858	-0985	.0716
23	.0019	-2032	-4031	.2038
24	.0165	-3115	.4090	.2646
25	.3859	-2705	-1064	.2373
26	.3609	-3443	.1462	.2702
27	.5187	-1745	-0595	.3030

$$X \begin{array}{l} .9995 \\ -.0097 \\ .0341 \end{array}$$

Group I. TECHNICAL SCHOOL BOYS. Final Rotation.

Group I. TECHNICAL SCHOOL BOYS.

4029	-2032
2909	-5053
2833	-2099

9772	-2164
7283	-6549

1.9985
 $= (1.3411)$
 $\text{Recip} = .7467$

1860	-1849
3842	-7288

II	III	h^2	V	II	III	h^2
5025	0522	0466	.7633	-2095	.0522	.6301
1405	.1103	.0519	.7539	-1405	.1103	.6003
0501	-0515	.0563	.6466	.0501	-0615	.4243
2054	.3007	.1327	.5470	.2056	.3007	.4319
1360	-1360	.0250	.2651	.1023	.1360	.0993
0943	-4531	.1955	.3931	.0943	-4331	.3510
1383	-0588	.0522	-0008	.1383	-0588	.0226
2871	-2381	.1391	-0912	-2871	-2381	.1474
1798	.1798	.0543	-0907	.1483	.1798	.0625
4066	-4066	.2344	-0725	-2430	-4066	.2230
1123	-1123	.2021	.0281	-4366	-1123	.2040
0341	.0341	.0010	.0365	-3368	-0340	.1159
00003	.00003	1.0000 =	-2983	.2835	-2099	.2134
9994	-.9994	.	-1126	.3488	-0870	.1419
0227	0227	.1242	-1707	-2920	.2227	.1639
2114	.2114	.0452	-0983	-0217	.2114	.0548
3294	-3294	.1115	.2419	-2429	-2293	.1701
1043	.1043	.0180	-0381	-0845	.1043	.0194
3788	-3788	.1438	-1448	-0482	-3788	.1668
0671	-0671	.0297	-0368	.1793	-0871	.0411
5053	-5053	.3024	-0757	.2909	-5053	.3456
1860	-1860	.0432	-1670	.0928	-1860	.0711
3024	-3024	.2024	-.0099	.4029	-2032	.2037
3115	-3115	.2646	.0335	-4082	-3115	.2646
2701	.2701	.2353	.3847	.1195	-2701	.2353
2720	.2720	.2720	.3690	-1338	-3440	.2720
3016	.3016	.3216	.5147	.0772	.1750	.3016

Appendix 2.

Group I. TECHNICAL SCHOOL BOYS. Final Rotation.

st.

23	.4029	-2032
21	2909	-5053
3	2835	-2099
<hr/>		
r-	.9773	-.9184
1	.7288	-6849

$$s.sq = 1.7986^2 = (1.3411)^2$$

$$Recip = .7457$$

.7288	-1849
-6849	-7288

	II	III	h^2		II	III	h^2
1	-2095	.0522	.0466	x	-.1884	.1054	.0466
2	-1405	.1103	.0319		-.1779	.0158	.0319
3	.0501	-0615	.0063		.0786	.0105	.0063
4	.2056	.3007	.1327		-0561	-3600	.1327
5	.1023	.1360	.0290		-0186	-1692	.0290
6	.0943	-4331	.1965		.3654	+2510	.1965
7	.1383	-0588	.0226		.1411	-0519	.0226
8	-2871	-2381	.1391		-0462	.3702	.1392
9	.1483	.1798	.0543		-0151	-2326	.0543
10	-2430	-4066	.2244		.1014	.4628	.2245
11	-4366	-1123	.2032		-2413	.3809	.2033
12	-3368	-0340	.1146		-2222	.2555	.1146
13	.2835	-2099	.1244		.3504	-0412	.1245
14	.3488	-0870	.1292		.3138	-1755	.1293
15	-2920	.2227	.1349		-3653	.0377	.1349
16	-0217	.2114	.0452		-1606	-1392	.0452
17	-2429	-2293	.1116		-0200	.3335	.1116
18	-0845	.1043	.0180		-1330	-0181	.0180
19	-0482	-3788	.1458		.2243	.3091	.1459
20	.1793	-0871	.0397		.1903	-0593	.0397
21	.2909	-5053	.3399		.5581	+1690	.3400
22	.0928	-1860	.0432		.1950	.0720	.0432
23	.4029	-2032	.2036		.4328	-1279	.2037
24	-4082	-3115	.2636		-0841	.5066	.2637
25	.1195	-2701	.0872		.2720	.1150	.0872
26	-1338	-3440	.1362		.1381	.3423	.1362
27	.0772	.1750	.0366		-0636	-1804	.0366

Group II. SECONDARY SCHOOL GIRLS

Tests.

7	.6512	.4409	-3051	1018	0701
8	.6792	.3224	-2412	2078	-0898
9	.5514	.3415	-2891	.3143	-3695

\sum	1.8818	1.1048	-.8354	.6239	-3892
\sum^2	3.5412	1.2206	.6979	.3893	.1515
N.	.7681	.4982	-3410	.2547	-.1588

$5.59 = 60005$

$60005 = (2.4499)^2$

Recip = .40816

.7681	.2432	.	+.3083	.5594
.4509	.4379	.	+.1200	-.8624
-.3410	-.1073	.	.9337	.
.2547	-.8097	+.5292	.	.
-.1588	+.5048	.8488	.	.

I. II. III. IV. V. h^2

1	.2606	-3541	-0961	.1427	-0644	.2270		
2	.3294	-2540	-3706	-2079	.4505	.5565		
3	.4996	-3504	-2566	-0666	-1322	.4601		
4	.4500	-2582	-2114	-3530	-3178	.5395		
5	.2842	-5755	-3548	.1023	1391	.5677	.7681	.2416
6	.4513	-2844	-2479	.2482	-2138	.4533	.4509	.1418
7	.6512	.4409	-3051	.1018	.0701	.7268	-.3410	-1073
8	.6792	.3224	-2412	.2078	-0898	.6747	.2547	-8097
9	.5514	.3415	-2891	.3143	-3695	.7395	-.1588	+.5047
10	.6008	.3789	-2629	.3591	.3058	.7961		
11	.3536	.0370	-.0996	-1192	.2263	.2017		
12	.1664	-2511	4434	.0576	.0516	.2933		
13	.3568	.0241	.4777	-3769	-3566	.6253		
14	.6744	.2321	.3363	.1726	.3395	.7668		
15	.4591	.0706	.2842	.3240	-1589	.4267		
16	.5001	.2132	.1352	-1878	-3065	.4430		
17	.1671	-3012	.2887	.2793	.2979	.3687		
18	.3306	-4143	.3641	.0269	.0613	.4180		
19	.3469	-2423	.4092	-0777	-0973	.3620		
20	.6852	.3197	.1032	.0635	-1250	.6020		
21	.7503	.2500	-1629	-1708	-1827	.7145		
22	.6460	.4024	-0629	-2132	.1352	.6469		
23	.5030	.1510	-1589	-2040	.2844	.4235		
24	.7017	.1547	-.2380	-1835	-1191	.6208		
25	.3380	.0635	.0025	-0938	.3278	.2345		

RAYBURN & TAYLOR'S ROTATION. First Factor.

			I	II	III	IV	V	h ²	
.	+3083	5062	.1198	-1250	.0209	-0735	.4373	.2270	
.	+1810	-8624	-1403	.4790	.2723	-2905	.3858	.5585	
.	9339	.	.3173	.0858	-1475	-1490	.5551	.4601	
.	.	.	.2617	.2202	-4565	-1054	.4505	.5395	
.	.	.	.0837	.0125	.1722	-3479	.6402	.5676	
.	.	.	.4001	-2136	-0501	-1439	.4737	.4533	
.	.	.	.8178	.2055	.1134	-0044	-0505	.7266	
.	.	.	.8165	.0221	.0337	.0450	.0658	.6747	
.	.	.	.8148	-2285	-1473	-0382	-0153	.7395	
.	.	.	.7649	.0907	.4496	.0083	-0226	.7960	
.	.	.	.2560	.3121	.1290	.0227	.1471	.2017	
.	.	.	.1301	-0636	.0743	.4199	.3008	.2932	
.	.	.	.0827	-1636	.5021	.5605	.1599	.6253	
.	.	.	.4980	-1913	.3759	.5640	.1413	.7665	
.	.	.	.3953	-2521	.0366	.4197	.1715	.4267	
.	.	.	.4350	-1339	.3595	.3190	.0693	.4430	
.	.	.	-0821	-1091	.4007	.2666	.3443	.3688	
.	.	.	-0599	-0088	.0663	.3670	-5247	.4180	
.	.	.	.0133	-0193	-1237	.4452	.3846	.3620	
.	.	.	.6713	-0853	-0725	.3655	.0712	.6020	
.	.	.	.7301	-2803	-2455	.1244	-1643	.7145	
.	.	.	.6233	.4607	.0019	.2133	-0200	.6468	
.	.	.	.4115	.4687	.1334	.0340	.1244	.4235	
.	.	.	.4997	.2544	.1982	.4666	.2218	.6206	
.	.	.	.2115	.3318	.2286	.1180	.1164	.2345	

Group II. SECONDARY SCHOOL GIRLS

Test.

2	.3858	.4790	.2723	-2905
3	.5551	.0858	-1475	-1490
4	.4505	.2202	-4565	-1054
5	.6402	.0125	-1722	-3479

2.0316	.7975	.1595	-.8928
4.1274	.6360	.0254	.7971

= 5.5859

Normalized.

s.s.g 5.5859 = (2.3637)²

Recap = .4231

.8596	.3374	-0675	.3777
.3374	-8596	-3777	-0675
.0675	-3777	.8596	.3374
-.3777	-0675	-3374	.8596

Loadings after first Rotation

	V	II	III	IV	h ²		
1	.4373	-1250	.0209	-0735	.2127		
2	.3858	.4790	.2723	-2905	.5368		
3	.5551	.0858	-1475	-1490	.3595		
4	.4505	.2202	-4565	-1054	.4709		
5	.6402	.0125	.1722	-3479	.5607		
6	.4737	-2136	-0501	-1439	.2932	.8596	.3374
7	-0505	.2055	.1134	-0044	.0577	.3374	-8596
8	0658	.0221	.0337	.0450	.0080	.0675	-3777
9	-0153	-2285	-1473	-0387	.0756	-3777	-0675
10	-0226	.0907	.4496	.0083	.2109		
11	.1471	.3121	.1290	.0227	.1362		
12	.3008	-0636	.0743	.4199	.2764		
13	.1599	.1636	.5021	.5605	.6186		
14	.1413	.1913	.3759	.5640	.5159		
15	.1715	-2521	.0366	.4197	.2704		
16	.0693	.1339	.3595	.3190	.2537		
17	.3443	-1091	.4007	.2666	.3621		
18	.5247	-0088	.0663	.3670	.4145		
19	.3846	.0193	-1237	.4452	.3618		
20	.0712	.0853	-0725	.3655	.1512		
21	.1643	.2803	-2455	.1244	.1813		
22	-0200	.4607	.0019	.2133	.2581		
23	.1244	.4687	.1334	.0340	.2541		
24	.2218	.2544	.1982	.4666	.3709		
25	.1164	.3318	.2286	.1180	.1898		

RAYBURN & TAYLOR. Second Rotation.

		V	II	III	IV	h^2
		.3629	.2521	.0605	.1175	.2127
		.6213	.3648	.1251	.0445	.5368
		.5524	.1793	.1463	.0260	.3594
		.4705	.1422	-4704	-0893	.4708
		.6976	.1637	.2175	.0000	.5607
-0675	.3777	.3861	.3721	.0544	.0527	.2932
-3777	-0675	-0352	-2362	.0248	.0015	.0576
.8596	.3374	.0493	-0126	.0010	.0734	.0079
-3374	.8596	-.0858	.2495	.0285	-0729	.0757
		.0384	-2560	.3509	.1442	.2109
		.2320	.2689	-0246	.0975	.1362
		.0835	.0997	-0741	.5039	.2766
		.0148	-3142	.1699	.7006	.6186
		-0017	-2968	.0510	.6521	.5159
		-0937	.2324	-0265	.4549	.2704
		.0085	-2490	.1461	.4126	.2537
		.1855	.0406	.2725	.5017	.3620
		.3139	.1348	-0989	.5366	.4144
		.1606	.1298	-2898	.4849	.3618
		-0530	-0466	-2227	.3109	.1512
		.1722	-1012	-3701	.0672	.1813
		.0578	-4179	-2430	.1453	.2581
		.2612	-4136	-0822	.0896	.2541
		.1136	-2502	-0981	.5346	.3709
		.1829	-3403	.0235	.2001	.1898

GROUP II. SECONDARY SCHOOL GIRLS

Test	IV	III	II
13	.7006	.1699	-3142
14	.6521	0510	-2968
17	.5017	2725	0406
18	.5366	-0989	1348
19	.4849	-2898	1298

Normal	2.8759	.1047	-.3058
	.9937	.0362	-.1057

$\sum 8.3753$

$8.3753 = (2.8940)^2$
 $Recap = .34554$

	.9937	-1056	.0375
	-.0362	.0040	.9993
	-1057	-9944	

	IV	II	III	h^2
1	.1175	.2521	.0605	.08105
2	-.0445	.3648	.1251	.1507
3	.0260	.1793	.1463	.0542
4	-.0893	.1422	-.4704	.2495
5	.0000	.1637	.2175	.0741
6	.0527	.3721	.0544	.1442
7	.0015	-.2362	.0248	.0564
8	.0734	-.0126	.0010	.0055
9	-.0729	.2495	.0285	.0684
10	.1442	-.2560	.3509	.2095
11	.0975	.2689	-.0246	.0824
12	.5039	.0997	-.0741	.2693
13	.7006	-.3142	.1699	.6184
14	.6521	-.2968	.0510	.5159
15	.4549	.2324	-.0265	.2616
16	.4126	-.2490	.1461	.2536
17	.5017	.0406	.2725	.3276
18	.5366	.1348	-.0989	.3159
19	.4849	.1298	-.2898	.3360
20	.3109	-.0466	-.2227	.1484
21	.0672	-.1012	-.3701	.1517
22	.1453	-.4179	-.2430	.2548
23	.0896	-.4136	-.0822	.1858
24	.5346	-.2502	-.0981	.3580
25	.2001	-.3403	.0235	.1564

X	.9937	-1056	.0375
	-.0362	.0040	.9993
	-1057	-9944	.

Appendix 2.

RAYBURN & TAYLOR. Third Rotation. Fiscal Rotation.

4778	1378
3605	-0986
2250	-4122
2375	*1479

3008 -2251 1.7427 1.7427 = (1.320)³
 2250 = 75757

4854	-1708
1708	-9884

II	III	n ²	II	III	n ²
0718	.2053	-0701	-1142	-2404	-0701
1276	-3662	.1504	-1382	-3331	.1504
1473	-1801	.0542	-1768	-1323	-0542
3778	.1378	.2375	4273	-2173	*2473
2156	1.012	-0716	402	-1257	*0730
0542	.0178	-1276	21	-3334	-1431
0858	.0039	-1475	148	-3359	-0563
0357	-0442	.4778	069	*0111	-0009
0196	-0289	-2156	614	-2327	*0612
3638	.0331	-0582	072	.5091	-1961
0132	-.0097	-0258	215	-2710	.0744
0209	.0733	-0087	504	-1302	.0142
2442	-.0845	-0196	216	-3251	-1424
1808	.1129	-3652	726	-2889	-0687
1699	.0897	.0152	630	-2420	-6624
3238	.5049	-0209	473	-2324	-0905
0442	.6896	-2442	293	-3021	-1655
2376	.6533	-1208	134	-1397	-6237
1354	.4464	-0208	088	-1062	-0765
3605	.4036	-1899	915	-3223	-0757
2250	.4683	-3238	720	-3207	-1397
0706	.5388	.0422	220	-3679	-3206
0451	.5078	.2375	393	-3920	-1761
0428	.3342	.1884	787	-2198	-0845
	.1095	-3605	113	-2359	-1129
	.1852	.2250			
	.1127	.0706			
	.5506	.0401			
	*2087	-0459			
		-3326			
		.1563			

Appendix 2.

Group II. SECONDARY SCHOOL GIRLS. Final Rotation.

est		
4	.4778	.1378
21	.3605	-0986
22	.2250	-4122
19	2375	+1479

$$1.3008 \quad -2251 \quad 5.59 \quad 1.7427 \quad 5.59 \quad 1.7427 \quad = (1.3201)^2$$

$$\text{Recip} = 75757$$

.9854	-1705
-1705	-9854

Group II Boys 22 (Sub)

	II	III	h^2		II	III	h^2
1	-0716	.2563	.0701		-1142	-2404	.0701
2	-1276	.3662	.1504		-1882	-3391	.1504
3	-1475	.1801	.0542		-1765	-1523	.0542
4	.4778	.1378	.2473		.4473	-2173	.2473
5	-2156	.1628	.0730	.9854	-2402	-1237	.0730
6	-0582	.3738	.1431	-1705	-1211	-3584	.1431
7	-0258	-2360	.0564		-0148	.2369	.0563
8	-0087	-0098	.0002		-0069	.0111	.0002
9	-0196	.2466	.0612		-0614	-2397	.0612
10	-3652	-2504	.1961		-3172	.3091	.1961
11	.0152	.2724	.0744		-0315	-2710	.0744
12	.0209	.1185	.0145		-0004	-1203	.0145
13	-2442	-2877	.1424		-1916	.3251	.1424
14	-1208	-2723	.0887		-0726	.2889	.0887
15	-0208	.2492	.0625		-0620	-2420	.0624
16	-1899	-2334	.0905		-1473	.2624	.0905
17	-3238	.0594	.1084		-3292	-0033	.1084
18	.0422	.1548	.0257		.0152	-1597	.0257
19	.2375	.1479	.0783		.2088	-1862	.0783
20	-1884	-0349	.0367		.1916	.0023	.0367
21	.3605	-0986	.1397		.3720	.0357	.1397
22	.2250	-4122	.2205		.2920	.3679	.2206
23	.0706	-4100	.1730		.1395	.3920	.1731
24	.0401	-2300	.0545		.0787	.2198	.0545
25	-0459	-3326	.1127		.0115	.3359	.1129

	I	II	III	IV	V
Cabrio	2109	4093	2680	1404	4400
1941m	1197	5002	1961	8261	2912
24156	4296	4092	1446	2616	1820
11107	2588	4747	2990	0286	0447
1037	1037	4932	3471	3510	1202
1037	1037	3203	5100	3285	2177
1037	7027	1210	1806	3215	3440
1037	5204	2663	2169	1530	2812
1037	5592	4316	1404	0729	2142
1037	6033	1972	1120	2017	1842
1037	5277	2029	3217	2170	2270
1037	4400	0970	1131	1679	2044
1037	1197	3841	1768	1661	2047
1037	1641	1641	0149	1197	267
1037	2630	0286	0286	3242	219
1037	2575	1961	1961	0286	219
1037	0286	0286	0286	0286	219
1037	2816	2895	2895	1476	3746
1037	2770	2770	2770	2161	1187
1037	1190	1190	1970	1750	0286
1037	0484	0484	0584	0812	0286
1037	4587	4587	1400	1282	2107
1037	5845	5053	1924	5721	2110
1037	1144	0723	5702	3050	2110
1037	4217	2899	2241	2360	2110
1037	1234	3117	0998	0859	2110
1037	4276	1325	3377	0995	2110

APPENDIX III

Group Three (Sec. School Boys 22 Cab)

Landahl Rotation
and further Oblique
Rotation.

Note: The letter M is written by mistake on subjects which are not included in Group II (Secondary School 1111).

GROUP III - SECONDARY SCHOOL BOYS - FACTOR LOADINGS BEFORE ROTATION

	I	II	III	IV	V
Arabic	-.2109	.4009	.2480	.1604	.4623
English	.1167	-.6802	-.1961	.2261	.0915
Maths.	.4206	-.6823	-.1444	.2616	.2318
Geog.	.3632	-.4747	-.1890	-.0325	-.0617
History	.2588	-.6512	.3471	-.3216	.1369
Drawing	.1067	-.3238	.3100	.5883	.2178
Steph. "9"	.7027	.1210	-.1606	-.3215	-.3250
Cairo "9"	.5284	.2066	-.2149	.1533	-.2819
Prog. Mat.	.5592	.4316	-.1404	-.3726	-.2143
Verbal	.6363	.1975	-.1138	-.3817	.1643
Thurst. Cube	.6225	.2328	-.3219	.2173	.2508
Lozeng.	.4643	.5765	-.1131	.1677	.1384
Happy	.1725	.3841	-.1708	-.1361	.2666
Carl sq.	.6831	-.1641	-.3149	-.1197	.3651
Passalong	.4794	-.2630	.0898	-.3243	-.3225
Cube Const.	.6112	-.2576	.1261	.0856	-.2147
Nail B	.3057	.0927	.5256	.2930	.0565
Eye B	.2930	.2315	.3899	.1476	-.3732
Nail st.	.1893	.2770	.5725	.2101	-.1128
Koh's	.7757	.1190	-.1970	.1750	.0089
Moray H.	.8243	.0454	-.0594	-.0912	-.0056
Punched H	.6596	.4587	-.1408	.1282	-.0607
Form B	.5945	.5053	.1934	-.3721	.2140
Faces	-.1146	.0723	-.4752	.3040	-.2965
Ident N.	.4817	.2369	-.2241	.2340	.1173
Mirror	.5824	.3117	.0992	.0659	.1562
Rating	.4275	-.3835	-.3877	.0995	-.1600

Note: The Letter M is written by tests or subjects which are not included in Group II (Secondary School Girls).

L

E

.447	-.447	.447	.447	.447	.3794	.1626	-.1314	.4677	.5446	=
.894	-.224	-.224	-.224	-.224	.1837	.8905	.5410	.4677	-.0644	
.000	.866	-.289	-.289	-.289	.1837	.1626	.5410	.4677	.5446	
.000	.000	.816	-.408	-.408	.1837	.1626	.5410	.0940	.5446	
.000	.000	.000	.707	-.707	.8687	-.3573	-.3235	-.5786	-.3254	

Fo.

I	II	III	IV	V
-.2109	.4009	.2480	.1604	.4623
.1167	-.6802	-.1961	.2261	.0915
.4206	-.6823	-.1444	.2616	.2318
.3632	-.4747	-.1890	-.0325	-.0617
.2588	-.6312	.3471	-.3216	.1369
.1067	-.3238	.3100	.5883	.2178
.7027	.1210	-.1606	-.3215	-.3250
.5284	.2066	-.2149	.1533	-.2819
.5592	.4316	-.1404	-.3726	-.2143
.6363	.1975	-.1138	-.3817	.1643
.6225	.2328	-.3219	.2173	.2508
.4643	.5765	-.1131	.1677	.1384
.1725	.3841	-.1708	-.1361	.2666
.6831	-.1641	-.3149	-.1197	.3651
.4794	-.2630	.0898	-.3243	-.3225
.6112	-.2576	.1261	.0856	-.2147
.3057	.0927	.5256	.2930	.0565
.2930	.2315	.3899	.1476	-.3732
.1893	.2770	.5725	.2101	-.1128
.7757	.1190	-.1970	.1750	.0089
.8243	.0454	-.0594	-.0912	-.0056
.6596	.4587	-.1408	.1282	-.0607
.5945	.5053	.1934	-.3721	.2140
-.1146	.0723	-.4752	.3040	-.2965
.4817	.2369	-.2241	.2340	.1173
.5824	.3117	.0992	.0659	.1562
.4275	-.3835	-.3877	.0995	-.1600

Δ

.8042	.4564	.5221	.4106	.5561
.0211	-.0469	-.4086	.3171	.3302
-.1981	.7805	.2493	.4099	-.2765
-.2795	.2121	.3527	.5794	.3550
-.4843	.3676	.6112	.4755	.6151

Structure on Reference Vectors.

Δ

.8042	.4564	.5221	.4106	.5561
.0211	-.0469	-.4086	.3171	.3302
-.1981	.7805	.2493	.4099	-.2765
-.2795	.2121	.3529	.5794	.3550
-.4843	.3676	.6112	.4755	.6151

I	II	III	IV	V
-----	-----	-----	-----	-----
.0108	.0137	.4256	-.0737	.0310
.1671	.2519	.6963	.1589	.2840
.3585	.0109	.2873	-.1270	.0480
.1496	.4007	.4498	-.0729	-.1904
-.2523	.5107	.6059	.5126	.2095
.8467	.0020	-.0346	.0797	.1611
.5655	-.0074	.0197	.1492	.3025
.6945	-.0324	-.1818	-.0089	.2282
.5655	.1718	.1889	.1342	.4161
.3871	.1602	.3795	.4426	.7434
.2941	.1830	.1224	.4901	.6245
.0896	-.0035	.0055	.1705	.3856
.4649	.1825	.5261	.2036	.5948
.6090	.1139	.0686	-.1910	-.1583
.5412	.3287	.3548	.1685	.1183
.0344	.6283	.3906	.5670	.1940
.3028	.3213	-.0205	.2616	-.0456
.0406	.5233	.1335	.4683	.0436
.6121	.2351	.3744	.3811	.5927
.7038	.3063	.3614	.2730	.45399
.4616	.1768	.1300	.4040	.5654
.4508	.3983	.1517	.3698	.4435
-----	-----	-----	-----	-----
.3146	.1266	.2530	.3724	.5633
.3612	.4000	.3201	.4910	.5188
.4622	-.1632	.2205	-.1234	.1552

NOTE:

Test 1 and 24 are ruled out of the battery for they seem to be affected by external factors which have nothing to do with the rest of the battery. This is also the case in Rayhorn & Taylors rotation.

L = Landahl M
E = Linear Equation M

Ic	IIc	IIIc	IVc	Vc
1.000	-1.9009	-1.1759	-.7606	-2.1921
1.000	-5.8287	-1.6804	1.9375	.7841
"	-1.6222	-.3433	.6220	.5511
	-1.3069	-.5204	-.0895	-.1699
	-2.4389	1.3412	-1.2427	.3290
	-3.0347	2.9053	5.5135	2.0412
	.1722	-.2285	-.4575	-.4625
	.3910	-.4067	.2901	-.5335
	.7718	-.2511	-.6663	-.3832
	.3104	-.1788	-.5999	.2582
	.3740	-.5171	.3491	.4029
	1.2416	-.2436	.3612	.2981
	2.2270	-.9902	-.7890	1.5456
	-.2403	-.4610	-.1753	.5345
	-.5486	.1873	-.6765	-.6727
	-.4215	.2063	.1401	-.3513
	.3032	1.7194	.9584	.1848
	.7901	1.3308	.5038	-1.2738
	1.4633	3.0244	1.1099	-.5959
	.1535	-.2540	.2256	.0115
	.0551	-.0721	-.1106	-.0068
	.6955	-.2135	.1943	-.0920
	.8499	.3253	-.6259	.3600
	-.6309	4.1466	-2.6528	2.5873
	.4918	-.4652	.4858	.2435
	.5352	.1703	.1131	.2682
	-.8971	-.9069	.2327	.3743

Land.

.447	.447	.447	.447	.447
.894	-.224	-.224	-.224	-.224
.000	.866	-.289	-.289	-.289
.000	.000	.816	-.408	-.408
.000	.000	.000	.707	-.707

Centroid Factors after being Extended and Multiplied by Landahl Matrix.

X I	Y II	Z III	U IV	V V
-1.2524	-.1455	.5920	-.0269	3.0728
-4.7639	.2947	3.819	2.002	.8934
-1.0033	.5131	1.4171	1.0461	.2662
-.7214	.2891	.8171	.8065	1.0468
-1.7334	2.1548	-.4705	1.4867	.7387
-2.2560	-1.3892	4.7861	-.5192	-3.4055
.6009	.2105	.1011	.3341	.9881
.7965	.0072	.7137	-.0186	.7358
1.1370	.0567	-.1970	.3476	.8895
.7245	.2226	-.0604	.8564	.4913
.7858	-.0846	.7975	.7052	.0854
1.5570	-.0421	.5340	.3027	-.1189
2.4379	-.9094	-1.4095	1.6490	-.5365
.2322	.1016	.4910	1.0835	.3277
-.0435	.7321	-.0363	.3162	1.2674
.0703	.7201	.5961	.1763	.6730
.7181	1.8681	.6642	-.3782	-.6395
1.1533	1.4225	.2965	-1.2207	.5804
1.7550	2.7383	.1508	-1.6290	-.7863
.5842	.1926	.6701	.4021	.3858
.4962	.3722	.3652	.4958	.5054
1.0688	.1063	.5115	.2086	.3256
1.2068	.5383	-.3481	.6725	.1636
-.1170	4.1793	-3.0574	2.3015	-1.3569
.8867	-.0660	.8677	.4452	.1009
.9255	.4746	.3702	.4214	.0421
-.3550	-.1374	1.0999	1.0797	.5505

Techn.
Draw.

- .362
- .159
- .483
- .244

- .184
- .563
- .010
- .040
- .366
- .223
- .237
- .277
- .141

1. CORRELATION BETWEEN
ACADEMIC and TECHNICAL TESTS

APPENDIX IV

GROUP I (TECHNICAL SCHOOL BOYS)

	Arabic	English	Maths	Verbal Intel.	Pass-along	Koh's	Cube Cons.	Karls	Moray House	Form B
Arabic	1	.553	.488	.098	-.201	-.015	-.057	-.253	-.035	-.253
English	.553	1	.429	.057	.012	.027	-.010	-.323	.056	-.001
Maths	.488	.429	1	-.053	.027	.089	.150	.208	.070	.225
Verbal Int.	.098	.057	-.053	1	-.002	.303	.089	-.211	.494	.102
Passalong	-.201	.012	.027	-.002	1	.311	.368	.232	-.097	.030
Koh's	-.015	.027	.089	.303	.311	1	.424	.343	.537	.311
Cube Cons.	-.057	-.010	.150	.089	.368	.424	1	.445	.271	.245
Karls	-.253	-.323	.208	-.211	.232	.343	.445	1	.335	.432
Moray House	-.035	.056	.070	.494	-.097	.537	.271	.335	1	.397
Form B	-.253	-.001	.225	.102	.030	.311	.245	.432	.397	1
Nail B	-.010	.086	.346	-.076	.065	.051	.148	.622	.242	.506
Nail St.	-.115	-.135	-.062	.210	.053	.247	.161	.270	.224	.147
Shop Work	.208	.021	.291	-.257	-.086	.092	.244	.201	.016	.211
Tech. Draw.	.352	.189	.323	.244	-.184	.363	.010	.040	.366	.223

CORRELATION BETWEEN ACADEMIC and TECHNICAL TESTS

Nail B	Nail St.	Shop Work	Tech. Draw.
-.010	-.115	.208	.352
.086	-.135	.021	.189
.346	-.062	.291	.323
-.076	.210	-.257	.244
.065	.053	-.086	-.184
.051	.247	.092	.363
.148	.161	.244	.010
.622	.270	.201	.040
.242	.224	.016	.366
.506	.147	.211	.223
1	.348	.342	.237
.348	1	.122	.277
.342	.122	1	.161
.237	.277	.161	1

$$r = \frac{C}{\sqrt{AB}}$$

$$A = 7.144$$

$$C = 2.106$$

$$B = 30.606$$

$$r = \frac{2.106}{\sqrt{7.1444 \times 30.606}} = \frac{2.106}{\sqrt{218.649}} = \frac{2.106}{14.7865} = \underline{\underline{.143}}$$

116.93	-	$\frac{151}{12}$	=	12.58	4.47	116.93	-	2.09	=	114.84
124.50	-	$\frac{171}{12}$	=	14.25	10.71	124.50	-	1.83	=	122.67

APPENDIX IV

2. ANALYSIS OF VARIANCE

GROUP IV (ILLITERATES)

GROUP I (TECHNICAL SCHOOL BOYS)
24 cases

Ball 31,	$\sigma^2 =$	$\sqrt{\frac{48.36 - \frac{(101)^2}{12}}{12}}$	=	$\sqrt{\frac{49.54 - 8.33}{12}}$	=	$\sqrt{\frac{41.21}{12}}$
Passelona	$\sigma^2 =$	11.82				6.46
Kod'c	$\sigma^2 =$	10.71				
2129	$\sigma^2 =$	10.71				
2119	$\sigma^2 =$	11.39				
2113	$\sigma^2 =$	11.02				
Ball 31,	$\sigma^2 =$	6.46				

STANDARD DEVIATIONS OF GROUP IV (ILLITERATES) - 24 CASES

Passalong	$\sigma =$	$141.84 - \frac{(5)^2}{12}$	$=$	$\sqrt{141.84 - 2.08}$	$=$	$\sqrt{139.76}$
				$= 11.822$		
Koh's	$\sigma =$	$\sqrt{116.96 - \frac{(5)^2}{12}}$	$=$	$\sqrt{116.96 - 2.08}$	$=$	$\sqrt{114.88}$
				$= 10.718$		
Cube	$\sigma =$	$\sqrt{124.50 - \frac{(7)^2}{12}}$	$=$	$\sqrt{124.5 - 4.083}$	$=$	$\sqrt{120.42}$
				$= 10.974$		
Eye B	$\sigma =$	$\sqrt{132.96 - \frac{(6)^2}{12}}$	$=$	$\sqrt{132.96 - 3}$	$=$	$\sqrt{129.96}$
				$= 11.398$		
Nail B	$\sigma =$	$\sqrt{129.96 - \frac{(10)^2}{12}}$	$=$	$\sqrt{129.96 - 8.33}$	$=$	$\sqrt{121.63}$
				$= 11.029$		
Nail St.	$\sigma =$	$\sqrt{49.34 - \frac{(10)^2}{12}}$	$=$	$\sqrt{49.34 - 8.33}$	$=$	$\sqrt{41.01}$
				$= 6.404$		
Passalong	$\sigma =$	11.822				
Koh's	$\sigma =$	10.718				
Cube	$\sigma =$	10.974				
Eye B	$\sigma =$	11.398				
Nail B	$\sigma =$	11.029				
Nail St.	$\sigma =$	6.404				

STANDARD DEVIATIONS of 24 CASES chosen at random from

GROUP I (TECHNICAL SCHOOL BOYS) in SIX of the PRACTICAL TESTS

	Pass	$\frac{d}{\text{Mean}}$ 50.42	d^2	Koh's	Mean 32.13	d^2	Cube	$\frac{d}{72.75}$	d^3
1	36	-14.416	207.821	21	-11.125	123.766	77	4.25	18.063
2	47	-3.416	11.669	17	-15.125	228.766	59	-13.75	189.063
3	54	-3.584	12.845	23	-9.125	83.265	74 $\frac{1}{2}$	1.75	3.063
4	34	-16.416	269.485	36	3.875	15.016	64	-8.75	76.563
5	60	9.584	91.853	20	-12.125	147.016	68	-4.75	22.563
6	60	9.584	91.853	48	15.875	252.015	66	-6.75	45.563
7	34	-16.416	269.485	10	-22.125	489.516	67 $\frac{1}{2}$	-5.25	27.563
8	63	12.584	158.357	28	-4.125	17.015	89	16.25	264.062
9	75	24.584	604.373	55	22.875	523.266	89	16.25	264.062
10	44	-6.416	41.165	31	-1.125	1.265	70	-2.75	7.563
11	52	1.584	2.509	30	-2.125	4.516	68 $\frac{1}{2}$	-4.25	18.063
12	45	-5.416	29.333	57	24.875	618.766	56 $\frac{1}{2}$	-16.25	264.062
13	33	-17.416	303.317	58	25.875	669.515	67 $\frac{1}{2}$	-5.25	27.563
14	50	-.416	.173	26	-6.125	37.516	45 $\frac{1}{2}$	-27.25	742.562
15	59	8.584	73.685	39	6.875	47.265	82	9.25	85.562
16	62	11.584	134.189	41	8.875	78.766	83 $\frac{1}{2}$	10.75	115.562
17	58	7.584	57.517	24	-8.125	66.015	56	-16.75	280.562
18	34	-16.416	269.485	13	-19.125	365.766	71	-1.75	3.063
19	59	8.584	73.685	50	17.875	319.515	88 $\frac{1}{2}$	15.75	248.063
20	34	-16.416	269.485	30	-2.125	4.515	83	10.25	105.063
21	55	4.584	21.013	17	-15.125	228.766	79 $\frac{1}{2}$	6.75	45.563
22	48	-2.416	5.837	56	23.875	570.016	70	-2.75	7.562
23	64	13.584	184.525	28	-4.125	17.015	89 $\frac{1}{2}$	16.75	280.563
24	50	-.416	.173	13	-19.125	365.766	81	8.25	68.065

S.sq. = 3183.832

S.sq. = 5274.624

S.sq. = 3210.004

Pass. $\sigma = \sqrt{\frac{3183.832}{24-1}} = \sqrt{138.427} = 11.7655$

Koh's $\sigma = \sqrt{\frac{5274.624}{23}} = \sqrt{229.331} = 15.1435$

Cube. $\sigma = \sqrt{\frac{3210.004}{23}} = \sqrt{139.5655} = 11.8137$

Eye B. $\sigma = \sqrt{\frac{2036.620}{23}} = \sqrt{88.549} = 9.4101$

	Eye B	$\frac{d}{78.13}$	d^2	N Board	$\frac{d}{97.312}$	d^2	Nail St.	$\frac{d}{60.354}$	d^2
85	6.875	47.266	73	-24.313	591.122	55	-5.354	28.665	
77	-1.125	1.266	108	10.687	114.212	113	52.646	2771.601	
75	-3.125	9.766	67 $\frac{1}{2}$	-29.813	888.815	52.5	-7.854	61.685	
66	-12.125	147.016	171	73.687	5429.774	57.5	-2.854	8.145	
66	-12.125	147.016	140 $\frac{1}{2}$	43.187	1865.117	80	19.646	385.965	
64	-14.125	199.516	140	42.687	1822.180	57.5	-2.854	8.145	
91	12.875	165.765	118 $\frac{1}{2}$	21.187	448.889	68.5	8.146	66.357	
84	5.875	34.516	91	6.313	39.854	48	-12.354	152.621	
80	1.875	3.515	90	-7.313	53.480	56	-4.354	18.957	
75	-3.125	9.766	126 $\frac{1}{2}$	29.189	851.881	56.5	-3.854	14.853	
76	-2.125	4.515	104	6.687	44.716	62.5	2.146	4.605	
85	6.875	47.265	85	-12.313	151.610	60	-.354	.125	
54	-24.125	582.015	62	-35.313	1247.008	55	-5.354	28.665	
80	1.875	3.515	67	-30.313	918.878	50	-10.354	107.205	
86	7.875	62.015	72	-25.313	640.748	55	-5.354	28.665	
90	11.875	141.016	84	-13.313	177.236	52	-8.354	69.789	
75	-3.125	9.766	104	6.689	44.743	60	-.354	.125	
65	-13.125	172.260	153	55.687	3101.042	72	11.646	135.629	
82	3.875	15.016	74 $\frac{1}{2}$	-22.813	520.433	52.5	-7.854	61.685	
90	11.875	141.016	66 $\frac{1}{2}$	-30.813	949.441	60	-.354	.125	
80	1.875	3.515	97 $\frac{1}{2}$.187	.035	56	-4.354	18.957	
83	4.875	23.766	85 $\frac{1}{2}$	-11.813	139.547	51	-9.354	87.497	
86	7.875	62.016	82 $\frac{1}{2}$	-14.813	219.425	64	3.646	13.293	
80	1.875	3.515	72	-25.313	640.748	54	-6.354	40.373	

S.sq. = 2036.620

S.sq. = 20900.934

S.sq. = 4113.732

Nail B $\sigma = \sqrt{\frac{20900.934}{23}} = \sqrt{908.736} = 30.145$

Nail St. $\sigma = \sqrt{\frac{4113.732}{23}} = \sqrt{178.858} = 13.3735$

GROUP IV
GROUP I

Row Scores

	Passalon	Koh's	Cube	Eye B	Nail B	Nail St.	Totals	Means
Tech. Boys	50.416	32.126	72.750	78.125	97.312	60.354	391.083	65.1805
Illiterates	41.584	12.334	60.187	65.708	88.979	67.145	335.937	55.9895
T.	92.000	44.460	132.937	143.833	186.291	127.499	727.020	G.T.
Mean	46.000	22.230	66.4685	71.9165	93.1455	63.7495	G.M.	60.5850

Correction = G.T. x G.M. = 727.020 x 60.5850 = 44046.5067

Sum sq. for Groups (rows) = $\frac{(391.083)^2}{6} + \frac{(335.937)^2}{6} = \frac{265799.581}{6} = 44299.930$

S. sq. for Tests = $(92.00)^2 + (44.460)^2 + (132.937)^2 + (143.833)^2 + (186.291)^2 + (127.499)^2$

= $\frac{99761.201}{2} = 49880.6005$

S. sq. for Classes = $(50.416)^2 + (32.126)^2 + (67.145)^2$

= 50329.248 - 44046.507 = 6282.741

Between Tests = 49880.601 - 44046.507 = 5834.094

Between Groups = 44299.930 - 44046.507 = 253.423

Remainder = 5834.094 - 253.423 sublt. from 6282.741

= 195.224

9-T TECHNICAL SCHOOL BOYS

(Note: Numbers in cells represents the mean score of each group in each test.)

	d.f.	S.Sq.	Variance	F
Groups (9)	1	253.423	253.423	6.491
Tests (T)	5	5834.094	1166.819	29.885
Remainder (9XT)	5	195.224	39.0448	
Classes	11	6282.741		

Level of significance.

Groups $\left. \begin{matrix} \text{d.f.} \\ 1,5 \end{matrix} \right\} F = 5.764 \therefore$ difference is significant on 1% level.

Tests $5,5 \quad F = 10.97 \therefore$ difference is significant on 1% level.

APPENDIX IV

The question of a school of medicine
is one of the most important of the day
and it is one which has attracted
the attention of the public in a
marked degree. It is a question
which has to do with the future
of the country and the welfare
of the people. It is a question
which has to do with the
highest interests of the community
and the state.

APPENDIX IV

3. CRITERIA CALCULATION

(GROUP I - TECHNICAL SCHOOL BOYS)

55 cases

THE CALCULATION OF A CRITERION.

The question of a sound and reliable criterion for practical ability is one of the most difficult problems. In our research as the subjects are students, so no estimate is possible for their success in real practical situations in life and at work. We are satisfied to use as a criterion, performance in practical school subjects, as Shopwork, Technical Drawing, Mathematics and Personality Drawing. Nevertheless, we have to bear in mind that we must accept it with its defect for the following reasons:-

In the first place, Technical School subjects are affected by training on the one hand and character and personality traits on the other. As Cox says, the ability of these subjects to tax ingenuity depends on the methods of teaching them.

In the second place, most of the students forming Group I which is used for the calculation of the criterion, have only finished their first year and as Vernon discovers during the selection of Torpedo men during the War, that some of those who pass their first year are sometimes proved to be lacking in abilities to go on with success till the end of the training course.

We calculate the correlation between the criterion and performance in some of the practical tests using the straight sum and the pooling square. The correlation is found to be .434. This is no doubt /

doubt a good result owing to the imperfection of the criterion, and I think that it could be raised to .6 or .7 if a more reliable criterion was available.

Shopw.	5	.333	.333	.333	1.00	.152	.152	.152	.390	.181	.181	.181	.181
Draw.	6	.152	.152	.152	.152	1.00	.333	.333	.390	.306	.306	.306	.306
Steph.	8	.152	.152	.152	.152	.152	1.00	.333	.390	.306	.306	.306	.306
Carl	14	.152	.152	.152	.152	.152	.152	1.00	.390	.306	.306	.306	.306
Loza.	17	.152	.152	.152	.152	.152	.152	.152	1.00	.306	.306	.306	.306
To. Ca.	21	.152	.152	.152	.152	.152	.152	.152	.152	1.00	.306	.306	.306
P.His.	22	.152	.152	.152	.152	.152	.152	.152	.152	.152	1.00	.306	.306
Neill.	17	.152	.152	.152	.152	.152	.152	.152	.152	.152	.152	1.00	.306
Koh'a	20	.152	.152	.152	.152	.152	.152	.152	.152	.152	.152	.152	1.00



	3	27	5	6	7	8	14	12	11	22	17	20	
Maths	3	1.00	.571	.291	.323	.152	.200	.208	.211	.071	.074	.346	.089
Pers.	27	.571	1.00	.051	.327	.312	.419	.249	.187	.069	.217	.253	.262
Shopw.	5	.291	.051	1.00	.161	-.137	-.023	.201	.306	.280	-.096	.342	.092
T.Draw.	6	.323	.327	.161	1.00	.172	.084	.040	.070	.181	.171	.237	.363
Cairo "g"	7	.152	.312	-.137	.172	1.00	.624	-.032	.163	.325	.325	.342	.428
Steph. "g"	8	.200	.419	-.023	.084	.624	1.00	.193	.069	.030	.402	.028	.593
Carl	14	.208	.249	.201	.040	-.032	.193	1.00	.445	.238	.134	.622	.343
Lozs.	12	.211	.187	.306	.070	.163	.069	.445	1.00	.572	.125	.218	-.017
Th.Cu.	11	.071	.069	.280	.181	.325	.030	.238	.572	1.00	.313	.049	.111
P.Hls.	22	.074	.217	-.096	.171	.325	.402	.134	.125	.313	1.00	-.082	.438
Nailb.	17	.346	.253	.342	.237	.342	.028	.622	.218	.049	-.082	1.00	.051
Koh's	20	.089	.262	.092	.363	.428	.593	.343	-.017	.111	.438	.051	1.00

A	C
7.448	5.602
C	B
5.602	22.100

$$R = \frac{C}{\sqrt{AB}} = \frac{5.602}{\sqrt{7.448 \times 22.100}} = .436$$