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American Institute of Accountants. Committee on Selection of Personnel

THE AMERICAN INSTITUTE OF ACCOUNTANTS
ACCOUNTING TESTING PROGRAM

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Syracuse University
Tabbutt-Hubbard School
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University of Tennessee
University of Texas
A and M College of Texas
Texas Christian University
Texas Technological College

Triple Cities College
Union Junior College
Upsala College
University of Utah
University of Vermont

Villanova College
University of Virginia
Virginia Polytechnic Institute
Walla Walla College
Washington and Jefferson College

Washington and Lee University
Washington State College
Wayne University
Waynesburg College Uniontown Center
West Virginia State College

West Virginia University
Western Michigan College of Education
Western Reserve University
Wheaton College
University of Wichita

Wilkes College
College of William and Mary
University of Wisconsin

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INTRODUCTION

Testing programs were carried on under the direction of the Committee on Selection of Personnel of the American Institute of Accountants for both college students and employed accountants during the spring of 1950.

<u>College Accounting Testing Program.</u> The fourth spring college testing program was carried on between February 15 and June 30, 1950. During this period, colleges and universities administered a total of approximately 25,000 tests to students of accounting. This number was about 5,000 larger than the number in the spring of 1949. The number of colleges and universities participating in the program was 208 as compared with 159 institutions during the corresponding period of 1949.

The tests used as the basis of the spring program were the Achievement Test, Level I, form B, the Achievement Test, Level II, forms B and D, the Orientation Test, form A, and the Strong Vocational Interest Blank. As in preceding spring testing programs, the use of the Achievement Tests was stressed but there was considerable use of the other tests as well.

The Achievement Test, Level I, was taken by approximately 8,200 students this spring. Its most extensive use was with first-year students, but it was taken also by some students in the second and third years of study. Norms based on the use of this test in the spring of 1948 were available at the beginning of the program. The 1948 and 1950 test results will be combined to provide a highly stable set of norms for the Level I, form B, test.

In conformity with the practice begun in 1949, a two-hour form of the Achievement Test, Level II, was prepared and made available for use with accounting seniors during the last part of February and in March. Many colleges had expressed a desire for a Level II Achievement Test that would require less time than the four-hour forms A and B. This two-hour form of the Level II test, known as form D, was based on certain sections of form A. Form D was taken by 1902 seniors distributed among 45 colleges.

Achievement Test, Level II, form B, requiring four hours of working time, was made available for use after April 1. This form was administered by 90 colleges to 2515 seniors.

Since it is designed to measure ability or aptitude for the field of business, the Orientation Test is stressed in the fall program rather than in the spring. Nevertheless, this test was taken by approximately 6,200 students in the spring of 1950 distributed among 99 colleges. Form A, which had been used extensively in the fall but which had not previously been employed in a spring program, served as the basis of testing. As a result of the use of this form, spring norms were established for form A.

The Strong Vocational Interest Blank was filled out by a total of 1612 students in 43 colleges. It was not feasible to summarize the results of this test in the present bulletin.

The results of the Achievement Tests and the Orientation Test in all participating colleges considered as a group are presented in the second section of this bulletin. Comparative charts showing the distributions of scores for the individual colleges, designated by code numbers, are shown in the fourth section.

Staff Testing Program. An accounting testing program for persons outside college, known as the Professional Accounting Testing Program, has been made available continuously since the spring of 1947. A well-defined routine has been developed for this program, including the certification of examiners to give the tests in firms and in a number of testing centers throughout the United States.

A special staff testing program was carried on in April, 1950. The purposes of this program were (1) to encourage wider use of the tests among employed men, (2) to provide more adequate norms for employed accountants, and (3) to provide data for research on the value of the tests in predicting success of individuals in positions as accountants.

The tests used in the staff testing program were the Orientation Test, form A, the Achievement Test, Level II, form C, and the Strong Vocational Interest Blank.

The tests were given to a total of 971 staff members distributed among 175 firms. The results were reported to the firms in the form of distributions and lists of scores and on individual IBM cards.

The cooperation of fifteen firms was secured in rating their employees. All but two of these firms used a special Rating Scale for Employed Accountants, which was designed for this project. This form provided for the rating of seven aspects of the ability and work of each employee: (1) quantity of work, (2) quality of work, (3) knowledge of accounting, (4) ability to learn, (5) dependability and integrity, (6) initiative and responsibility, (7) cooperation – ability to get along with others, and (8) overall value to the organization. A study of the correlation of scores on the tests with these ratings has been undertaken, and the results will be reported elsewhere.

The distributions of the scores of the employed accountants on the Orientation and Achievement Tests are summarized in Section III of this bulletin.

SUMMARY OF RESULTS OF COLLEGE TESTING PROGRAM

The distributions of the scores of the college students on the Achievement Tests and the Orientation Test obtained during the spring of 1950 are shown in Tables I through V. The medians, quartiles, tenth and nintieth percentile scores, and ranges of the scores are reported at the bottom of the table. The medians and the inter-quartile ranges are also shown graphically.

Achievement Tests. Achievement Test, Level I, form B was used with the undergraduate students this spring and forms B and D of the Achievement Test, Level II was used with senior students.

Table I shows the distributions of total scores on the Achievement Test, Level I, form B. The scores are distributed separately by year of study. The possible range of scores for this test is 0 to 178. Each distribution covers all but a few points of the possible range. Some individuals know almost no accounting as measured by these tests, while others were able to answer nearly every question.

Although the ranges for the three years are fairly similar, there is a marked difference in the medians. The second-year median of 99.1 is almost 20 score points higher than the first-year median of 79.2 The difference between the second-year median and the third-year median is fairly small by comparison. The dotted lines across the distributions indicate the medians for this test when it was used during the spring program of 1948. It is curious to note that the 1948 median for first-year students is exactly the same as the 1950 median. However, the 1950 second-year median is slightly higher than the 1948 second-year median while the 1950 third-year median is slightly lower than the 1948 median.

Following the custom begun last year, a two-hour form of the Level II Achievement Test was used again. This year form D, adapted from form A, was used for the first time. The distribution of scores obtained from the administration of this form is shown in Table II. The total possible raw score on this test is 100. The range obtained during the March use of this test was 0 to 99. Since this is the first administration of this form, no comparison with previous use is possible.

For colleges preferring to use the four-hour form of the Achievement Test, form B was made available this spring. The distribution of scores for this test is shown in Table III. 2515 seniors took this form of the Achievement Test and the median obtained from the administration this year is just slightly lower than the median obtained during the spring of 1949.

Orientation Test. The Orientation Test was used again this spring although, of course, not as extensively as the Achievement Tests. The results for the administration of form A of this test are shown in Tables IV and V. The dotted lines across these distributions indicate the medians obtained from the combined administrations of this form during the fall programs of 1946, 1947 and 1948. Contrary to expectations, the fall medians are somewhat higher than the medians obtained on the test this spring.

TABLE I

DISTRIBUTIONS OF TOTAL SCORES ON ACHIEVEMENT TEST,
LEVEL I, FORM B

Score	1st year	2nd year	3rd year
177-178			
176			
172			
168			
164		1	
160	1	2	
156	9	2	2
152	10	6	2
148	17	12	2
144	16	15	2
140	29	22	4
136	41	12	7
132	72	21	9
128	70	33	8
124	85	38	12
120	110	42	15
116	135	39	12
112	190	33	13
108	221	50	13
104	286	39	23
100	300	41	17
96	317	42	18
92	363	51	17
88	380	39	12
84	404	32	13
80	428	44	13
76	412	28	6
72	324	34	13
68	370	31	3
64	357	17	5
60	354	18	2
56	294	22	4
52	282	11	5
48	258	14	3
44	227	8	
40	174	10	1
36	150	5	1
32	144	5	
28	90	6	
24	79	2	
20	53	3	
16	30	2	
12	28	2	
8	11	1	
4	8		
0-3	6		
Total	7135	835	257
Q3	97.6	119.7	119.6
Md	79.2	99.1	102.9
Q1	59.2	78.5	86.5
Range	0-162	10-164	36-157
10%ile	42.6	58.6	72.5
90%ile	113.5	133.8	133.0

- - - - Medians, spring, 1948

TABLE II

DISTRIBUTION OF TOTAL SCORES ON ACHIEVEMENT TEST,
LEVEL II, FORM D

Score	Seniors
100	
98	3
96	14
94	7
92	12
90	26
88	13
86	31
84	48
82	31
80	31
78	66
76	36
74	49
72	78
70	46
68	62
66	67
64	57
62	54
60	84
58	60
56	59
54	69
52	54
50	69
48	64
46	70
44	54
42	54
40	48
38	44
36	69
34	44
32	44
30	40
28	35
26	36
24	35
22	26
20	23
18	20
16	11
14	13
12	12
10	10
8	4
6	7
4	6
2	2
0-1	5
Total	1902
Q3	70.7
Md	55.8
Q1	39.5
Range	0-99
10%ile	26.9
90%ile	81.7

TABLE III

DISTRIBUTION OF TOTAL SCORES ON ACHIEVEMENT TEST, LEVEL II, FORM B

Score	Seniors
150	
147	
144	
141	2
138	5
135	1
132	5
129	16
126	20
123	19
120	30
117	37
114	50
111	58
108	65
105	78
102	84
99	95
96	104
93	115
90	103
87	116
84	118
81	136
78	127
75	130
72	114
69	128
66	131
63	126
60	84
57	85
54	81
51	56
48	53
45	39
42	30
39	29
36	15
33	16
30	7
27	2
24	1
21	2
18	2
15	
12	
9	
6	
3	
0-2	
Total	2515
Q3	97.2
Md	81.0
Q1	66.0
Range	19-142
10%ile	54.0
90%ile	110.6

- - - - Median, 1949

TABLE IV

DISTRIBUTIONS OF SCORES ON PART I, VERBAL, AND PART II, QUANTITATIVE
ON ORIENTATION TEST, FORM A

Score	VERBAL				Score	QUANTITATIVE			
	1st yr.	2nd yr.	3rd yr.	Senior		1st yr.	2nd yr.	3rd yr.	Senior
99-100									
96				2					
93				7					
90		2		5	30		2		7
87	4	1	1	20	29	3	2		19
84	4	1	1	27	28	9	4	2	43
81	12	3	3	50	27	6	6	2	37
78	25	5	7	56	26	23	10	3	44
75	25	5	3	65	25	27	18	2	76
72	41	7	6	70	24	41	12	14	84
69	66	17	12	98	23	53	17	16	105
66	64	19	15	101	22	75	18	5	110
63	95	15	13	120	21	92	24	18	123
60	82	25	7	96	20	105	22	18	140
57	107	31	11	130	19	125	46	11	142
54	116	28	18	141	18	144	28	22	145
51	161	30	17	135	17	178	36	16	148
48	182	33	15	152	16	238	41	19	125
45	200	46	21	118	15	220	50	28	102
42	221	33	26	128	14	235	39	21	109
39	254	37	26	88	13	251	44	14	87
36	274	38	19	90	12	264	32	16	80
33	247	34	7	66	11	230	24	11	45
30	278	40	12	57	10	220	20	9	58
27	265	32	13	38	9	206	15	2	26
24	211	22	6	19	8	192	12	6	13
21	170	14	1	18	7	160	8	7	12
18	158	15	2	6	6	102	5	2	8
15	101	5		2	5	90	1		8
12	64	1	3		4	73			2
9	30	1			3	45	2		3
6	19				2	34	2	1	1
3	7	1			1	28			2
0-2	5	1			0	19	2		1
Total	3488	542	265	1905	Total	3488	542	265	1905
Q3	49.8	56.5	60.8	66.7	Q3	17.1	20.0	20.8	22.4
Md	38.1	44.7	47.5	54.8	Md	13.3	16.4	16.8	18.8
Q1	28.2	33.3	39.4	44.2	Q1	9.6	13.3	13.9	15.2
Range	0-89	0-91	12-88	15-97	Range	0-29	0-30	2-28	0-30
10%ile	20.3	26.2	30.4	35.3	10%ile	6.5	10.4	10.9	12.1
90%ile	62.5	66.9	70.6	76.9	90%ile	20.8	24.0	23.8	25.5

- - - - Medians, combined fall programs, 1946, 1947 and 1948.

TABLE V

DISTRIBUTIONS OF TOTAL SCORES ON ORIENTATION TEST, FORM A

Scores	1st year	2nd year	3rd year	Seniors
128-130				
124				3
120				8
116	1	2		6
112		1		16
108	3	2	1	30
104	10	2	4	42
100	8	4	4	49
96	26	8	6	84
92	47	11	5	120
88	66	16	16	114
84	81	23	17	98
80	88	28	10	130
76	102	26	14	141
72	145	35	21	157
68	156	43	14	145
64	188	41	31	166
60	227	37	16	137
56	259	44	27	126
52	290	41	16	90
48	266	40	18	85
44	319	34	17	57
40	273	30	16	48
36	250	30	6	25
32	211	23	1	17
28	173	14	2	9
24	133	2		1
20	73	2	1	1
16	52	1	1	
12	25	1	1	
8	13	1		
4	1			
0-3	2			
Total	3488	542	265	1905
Q3	65.0	74.6	79.1	87.8
Md	51.3	60.9	65.4	73.2
Q1	39.0	47.7	52.8	60.5
Range	2-117	9-117	15-109	23-125
10%ile	29.2	37.4	43.6	49.5
90%ile	79.7	86.6	90.4	98.3

- - - - Medians, combined fall programs, 1946, 1947 and 1948

III

SUMMARY OF RESULTS OF STAFF TESTING PROGRAM

The distributions of the scores made on the Orientation Test and the Achievement Test, Level II, by the staff members in 175 firms who participated in the April, 1950, staff testing program are shown in Tables VI through IX. Separate distributions are shown for junior accountants, semi-seniors, senior accountants, and a fourth group including owners, partners, and superintendents, as well as distributions for the entire group of participants.

The median score is indicated in each instance by the short horizontal line adjacent to the distribution; the range of the middle 50 per cent of the scores is shown by the vertical line parallel to the distribution. For comparative purposes, the median for college seniors has been shown by a broken line across the distribution column.

It is interesting to see that the median scores on both the Orientation Test and the Achievement Test go upward with rise in employment level. In all four kinds of scores reported, the junior accountants have the lowest medians, the semi-seniors the next to the lowest, the senior accountants the next to the highest, and the small group of owners, partners, and superintendents the highest medians. This relationship holds true notwithstanding the fact that the junior accountants are in all probability the closest to college where much experience with the objective type of test is likely to be obtained, and the owners and partners are probably furthest removed from colleges in point of time.

The difference between the median scores at the different levels may be due to two factors. One of these is experience on the job, and the other is the selection that takes place from one level to the next higher one.

On the Orientation Test, the median verbal, quantitative, and total scores of the junior accountants are very close to the medians for college seniors. The medians made on this test by the semi-seniors are somewhat above the college senior medians, while the group of senior accountants surpasses the college seniors by a rather wide margin. In the owner-partner group, three-fourths or more of the men have scores above the college senior median on the Orientation Test.

The superiority of the employed men to the college seniors is even greater in the Achievement Test than in the Orientation Test. The medians for all four levels of employed men are well above the college senior median. So far as the entire group is concerned, a little more than three-fourths of the employed men have scores which reach or surpass the median for seniors in college.

On both the Orientation Test and the Achievement Test, part of the difference, but not all of it, is no doubt due to the fact that the employed men recorded their answers in the booklets, whereas the seniors used separate answer sheets. Individuals tend to work at a slightly slower rate when they record their responses on answer sheets.

One of the most interesting and challenging characteristics of the distributions on both tests is that, notwithstanding the selection that had presumably taken place in the employment and promotion procedures of the firms, the test scores are very widely distributed. The range in total scores on the Orientation Test is from 0 to 124 out of a possible 130 raw score points. While extremely low scores are an exception, it is to be noted that even when these unusually low scores are disregarded the distribution is still spread over a very wide range.

On the Achievement Test, the raw scores range from 0 to 55, out of a possible total of 57 points. Thus, nearly the entire possible range of scores is covered by the scores of these employed men.

It should not be inferred that if the scores of an employed man fall in the lowest part of these distributions his value to his employer is limited or that very high scores of a man necessarily mean that he will be an exceptionally valuable employee. Many factors other than those measured by these tests enter into success on the job. Moreover, because of chance factors in a testing situation the test results for an occasional man may not correctly indicate his actual ability or achievement. These results should be used only as one kind of evidence along with much other information about each individual.

TABLE VI

DISTRIBUTIONS OF SCORES ON PART I, VERBAL, AND PART II, QUANTITATIVE ON ORIENTATION TEST, FORM A

Score	VERBAL Juniors	S-Seniors	Seniors	Owners	Score	QUANTITATIVE Juniors	S-Seniors	Seniors	Owners
99-100									
96			2						
93		1	4	1					
90	2	3	10	4	30	5	2	3	
87	9	4	14	6	29	2	4	4	2
84	13	11	15	5	28	6	9	11	2
81	8	9	18	1	27	11	5	10	3
78	18	20	12	6	26	15	11	17	7
75	13	13	12	7	25	17	11	12	6
72	17	12	10	9	24	11	16	17	6
69	17	16	13	3	23	18	12	22	7
66	24	11	15	4	22	20	13	8	5
63	11	15	15	3	21	19	16	11	4
60	18	15	13	5	20	38	24	18	3
57	22	11	14	4	19	21	12	11	4
54	29	12	10	3	18	21	12	11	4
51	21	19	12	3	17	28	11	24	3
48	14	10	12	2	16	24	13	13	1
45	17	11	8		15	16	14	11	3
42	23	8	4		14	22	14	11	3
39	17	4	9		13	14	10	6	1
36	17	5	4		12	12	7	6	1
33	16	6	5		11	3	2	2	
30	9	3	1		10	9	6	3	
27	3	1	2		9	3	1	2	1
24	2	5			8	1	1	2	
21	2	1	1		7	5			
18	3	1			6	3	1		
15	1				5	2			
12	1				4				
9	1				3	3			
6	1				2				
3					1				
0-2	1				0	1			
Total	350	227	235	66	Total	350	227	235	66
Q3	70.7	76.0	81.7	82.5	Q3	22.9	24.1	24.9	25.6
Md	56.7	63.3	67.5	74.0	Md	19.4	20.4	20.9	23.0
Q1	43.8	51.3	54.2	62.7	Q1	15.6	16.1	17.1	18.9
Range	0-91	20-93	23-98	49-93	Range	0-30	7-30	8-30	9-29
10%ile	35.1	39.5	43.1	55.6	10%ile	12.4	13.5	14.2	15.2
90%ile	80.5	82.8	88.4	89.2	90%ile	26.3	26.8	27.5	27.1

- - - - Medians, college seniors, spring, 1950

TABLE VII

DISTRIBUTIONS OF TOTAL SCORES ON ORIENTATION TEST, FORM A

Scores	Juniors	Semi-Seniors	Seniors	Owners
128-130				
124			2	
120	1	2	3	1
116	3	1	10	3
112	4	7	11	6
108	13	10	16	4
104	6	12	16	2
100	18	12	14	10
96	24	17	19	8
92	18	12	8	2
88	29	19	25	6
84	16	17	14	7
80	19	20	11	5
76	16	12	15	3
72	30	13	11	4
68	25	19	14	4
64	23	14	14	1
60	27	10	11	
56	15	8	4	
52	17	6	7	
48	19	3	5	
44	9	4	1	
40	3	5	3	
36	4	2		
32	2	2	1	
28	3			
24	1			
20	1			
16				
12	3			
8				
4				
0-3	1			
Total	350	227	235	66
Q3	91.9	97.0	103.8	103.8
Md	74.9	83.1	89.0	96.5
Q1	61.4	68.6	71.6	83.6
Range	0-120	32-120	33-124	64-121
10%ile	49.7	56.4	60.9	73.6
90%ile	102.2	107.1	112.9	114.3

- - - - Median, college seniors, spring, 1950

TABLE VIII

DISTRIBUTION OF SCORES ON ALL PARTS OF THE ORIENTATION TEST
FOR THE TOTAL GROUP OF EMPLOYED ACCOUNTANTS

Score	Verbal	Score	Quantitative	Score	Total
99-100					
96	2			128-130	
93	6			124	2
90	19	30	10	120	7
87	33	29	12	116	17
84	45	28	28	112	28
81	36	27	30	108	43
78	56	26	50	104	36
75	45	25	46	100	55
72	49	24	50	96	68
69	49	23	60	92	41
66	55	22	47	88	80
63	44	21	50	84	55
60	52	20	83	80	56
57	52	19	50	76	46
54	55	18	48	72	59
51	55	17	66	68	62
48	38	16	53	64	52
45	37	15	44	60	49
42	36	14	50	56	27
39	30	13	31	52	30
36	26	12	26	48	27
33	27	11	7	44	15
30	13	10	18	40	11
27	6	9	7	36	6
24	7	8	4	32	5
21	4	7	5	28	3
18	4	6	4	24	1
15	1	5	2	20	1
12	1	4	1	16	
9	1	3	3	12	3
6	1	2		8	
3		1		4	
0-2	1	0	1	0-3	1
Total	886	Total	886	Total	886
Q3	76.4	Q3	24.1	Q3	98.0
Md	62.8	Md	20.3	Md	83.2
Q1	50.1	Q1	16.3	Q1	67.3
Range	0-98	Range	0-30	Range	0-124
10%ile	38.6	10%ile	13.3	10%ile	54.1
90%ile	85.1	90%ile	26.8	90%ile	108.8

____ Medians, college seniors, spring, 1950

TABLE IX

DISTRIBUTIONS OF TOTAL SCORES ON ACHIEVEMENT TEST, LEVEL II, FORM C

Score	Juniors	Semi-Seniors	Seniors	Owners	TOTAL
56					
54		1	1		2
52		1	1	1	3
50		1	3	1	5
48		1	4	2	7
46	6	5	9	6	26
44	1	5	13	1	20
42	5	3	8	5	21
40	19	15	18	10	62
38	11	15	16	4	46
36	21	12	25	7	65
34	20	15	16	1	52
32	29	25	18	6	78
30	25	20	18	3	66
28	22	14	14	4	54
26	34	21	19	6	80
24	22	19	9	3	56
22	17	16	15	4	54
20	18	10	9	2	40
18	15	5	6	1	27
16	24	9	5		38
14	13	5	3		21
12	14	2	2		19
10	8	3	3		15
8	4	1	1		6
6	7	2			9
4	5	2	2		9
2	3				3
0-1	5			1	6
Total	348	228	238	68	890
Q3	33.7	36.3	39.7	41.8	37.1
Md	27.1	30.5	33.4	36.9	30.2
Q1	18.5	24.2	26.5	28.0	23.1
Range	0-47	4-55	4-55	0-52	0-55
10%ile	12.4	17.7	20.4	23.4	16.1
90%ile	39.3	41.2	45.1	47.1	41.8

- - - - Median, college seniors, March, 1949

RESULTS OF ACHIEVEMENT TESTS AND ORIENTATION TESTS
IN INDIVIDUAL COLLEGES

The distributions of the total scores of the students in the partici-
pating colleges on the Achievement Tests and the Orientation Test are shown
in Tables X through XVIII. Distributions are identified by code numbers at
the top of each distribution and each college has been advised of its own
code number. The same code number applies to that college throughout the
tables in the bulletin.

The raw score scale is given at the left and right of each table. The
broken lines running horizontally across the table indicate the seventy-fifth
percentile, the fiftieth, and the twenty-fifth percentile for the distribution
of scores for the entire group of participating students.

At the bottom of each column, data are shown concerning the total number
of students in the group, the Q3, the median, the Q1, and the range of the
scores in that particular college. The median and the inter-quartile range
are also shown graphically beside each distribution.

Individual distributions of scores on the Achievement Test, Level I,
form B are shown in Tables X, XI and XII, for the first-year, second-year
and third-year students, respectively. Results for seniors using form D and
B of the Achievement Test, Level II are shown in Tables XIII and XIV. Tables
XV, XVI, XVII and XVIII present the results of the Orientation Test, form A.

The usual wide difference between the medians for college #1 and college
#95 in Table X is noticeable again this year. The highest median for Achieve-
ment Test, Level I, form B is 112.0 and the lowest is 47.0. However, in con-
sidering individual students, it is important to keep in mind that many out-
standing scores appear throughout the chart - irrespective of the college
median. The same, of course, is true of the low scores. This range of college
medians and individual variations is to be found throughout the charts.

TABLE X

DISTRIBUTION OF SCORES MADE ON ACHIEVEMENT TEST, LEVEL I, FORM X, BY FIRST-YEAR STUDENTS OF ACCOUNTING IN NINETY-FIVE COLLEGES

Distributions of less than 5 cases were excluded.

DISTRIBUTIONS OF SCORES MADE ON ACHIEVEMENT TEST, LEVEL I, FORM B, BY SECOND-YEAR STUDENTS OF ACCOUNTING IN THIRTY-FOUR COLLEGES

College numbers (column headers, left to right):

31, 3, 96, 60, 45, 48, 5, 19, 59, 55, 30, 21, 97, 8, 98, 99, 95, 100, 39, 101, 65, 87, 54, 82, 46, 102, 77, 84, 75, 71, 90, 78, 43, 103

Score scale (left and right margins): 177-178, 176, 172, 168, 164, 160, 156, 152, 148, 144, 140, 136, 132, 128, 124, 120, 116, 112, 108, 104, 100, 96, 92, 88, 84, 80, 76, 72, 68, 64, 60, 56, 52, 48, 44, 40, 36, 32, 28, 24, 20, 16, 12, 8, 4, 0-3

Summary statistics:

College	Total	Q3	Md	Q1	Range
31	15	144.5	131.3	123.8	120-162
3	18	144.5	130.7	123.0	79-150
96	54	142.0	126.5	112.5	73-158
60	14		126.0		73-164
45	6		126.0		99-162
48	6		116.0		88-142
5	29	127.5	115.3	99.0	49-141
19	69	125.2	111.7	100.1	52-155
59	25	122.8	111.0	93.0	57-150
55	10		110.0		79-128
30	13		109.0		70-137
21	21	129.0	104.7	94.5	73-148
97	26	118.0	104.0	87.3	72-145
8	16	114.7	104.0	72.0	56-143
98	23	121.0	102.0	91.5	50-140
99	22	118.0	102.0	91.5	73-138
95	10		102.0		60-135
100	48	116.0	101.3	89.0	34-143
39	30	116.7	100.0		26-143
101	12		96.0		51-131
65	39	118.5	95.6	87.5	40-154
87	9		95.0		53-114
54	5		93.0		81-117
82	69	110.5	92.4	80.0	28-142
46	19	102.5	85.0	71.5	32-145
102	28	96.0	84.0	45.0	20-129
77	37	97.8	82.8	45.0	46-111
84	13		82.0		49-129
75	17	103.0	70.0	55.0	28-125
71	9		69.0		31-104
90	12		66.7		49-104
78	15	85.0	66.0	55.0	36-98
43	38	79.0	62.7	50.0	10-142
103	35	76.3	62.0	45.0	17-121

Distributions of less than 5 cases were excluded.

TABLE XII

DISTRIBUTIONS OF SCORES MADE ON ACHIEVEMENT TEST, LEVEL I, FORM B, BY THIRD-YEAR STUDENTS OF ACCOUNTING IN FIFTEEN COLLEGES

	3	39	104	105	87	43	59	65	106	107	108	109	30	82	61	
177-178																177-178
176																176
172																172
168																168
164																164
160																160
156					1											156
152			1	1												152
148						1	1									148
144	1				1											144
140	1		1										1			140
136		2	1				1		1	1						136
132	1	1			1	1	1			2		1			1	132
128	1	1	2	1			1	1								128
124		3	4		1	2	1									124
120		1	3		1	1	1			2		1	1			120
116		1		2		2	4		1		1					116
112		2	1		1	3			1	2	2					112
108	1		1		1	1	3	1			2	1				108
104		2	2		1		4	1	1	4	3	4			1	104
100					1		2		2	1	4	2		2	1	100
96		1	1	1		3	3			3	2	3				96
92		2		1		3		1		4	1	1	1			92
88		2	1				1		1	2	2	2		1		88
84				1					2		6	1	1		1	84
80							1		1	2	2	2	1	1	1	80
76			2					1				2		1		76
72			2		1	3						3	1		2	72
68							1		1			1				68
64										1	1	2				64
60							1					1				60
56							1			1					1	56
52				1							1		1	1		52
48										1		1		1		48
44																44
40						1									1	40
36															1	36
32																32
28																28
24																24
20																20
16																16
12																12
8																8
4																4
0-3																0-3
Total	5	15	25	7	11	21	27	5	11	26	27	28	7	6	9	Total
Q3		129.0	126.8			119.5	119.3			113.0	105.7	104.0				Q3
Md	134.0	122.0	118.0	117.0	114.0	110.0	107.5	106.0	101.0	98.7	97.0	90.0	86.0	84.0	82.0	Md
Q1		105.5	94.5			93.7	98.3			91.0	85.8	74.7				Q1
Range	109-147	90-138	73-152	55-152	73-156	41-151	59-150	79-128	69-137	50-138	55-116	50-135	53-141	49-102	36-134	Range

Distributions of less than 5 cases were excluded.

TABLE XIII

DISTRIBUTIONS OF SCORES MADE ON ACHIEVEMENT TEST, LEVEL II, FORM D, BY SENIORS IN ACCOUNTING IN FORTY-FOUR COLLEGES

The table presents, for each of forty-four colleges (identified by number across the top and repeated at the bottom), the frequency distribution of scores on a scale running from 100 down to 0–1 at intervals of 2 points. Dashed reference lines are drawn across the distribution at the score levels 70, 56, and 38. Only the summary statistics at the foot of each column are transcribed below.

	110	111	29	38	9	112	113	114	115	56	116	31	79	35	44	96	117	118	71	119	30	120	24	27	121	21	122	123	124	125	80	126	127	128	129	106	46	130	20	131	86	132	133	61
Total	5	11	10	28	82	140	19	20	64	8	16	27	12	30	25	78	48	14	40	28	28	67	20	21	17	44	35	17	15	34	23	46	381	91	34	7	21	15	18	33	100	24	14	10
Q3				87.0	83.0	81.5	76.5	74.0	76.0			75.0		72.5	68.5	78.5	69.0		68.0	72.7	70.7	66.5	72.8	74.0	73.5	73.2	69.0	60.3		59.5	64.5	60.5	62.5	68.3	61.7		65.3		60.8	61.0	50.5	45.0		
Md	83.0	79.0	77.0	72.8	78.7	72.5	76.5	68.5	65.3	64.0	64.0	61.7	60.7	58.7	58.5	58.0	57.0	56.0	56.0	56.0	56.0	55.7	55.0	55.0	55.0	54.0	53.0	51.5	51.0	50.0	49.3	49.0	48.8	47.8	46.0	45.0	44.5	42.5	42.0	36.5	36.5	34.0	24.0	16.0
Q1				61.7	64.3	62.5			53.0			53.5		43.0	43.3	45.5	44.0		38.0	42.0	40.0	34.3	42.0	36.5	34.3	40.0	44.5	44.5		32.8			35.9	36.3			37.3		33.8	33.5	23.2	25.5		
Range	51-93	45-99	51-96	50-97	26-97	29-97	48-90	39-85	21-93	55-82	12-84	28-94	16-80	11-82	14-91	13-89	9-91	9-91	18-92	19-90	19-75	4-91	34-88	19-87	15-84	26-91	6-82	20-88	9-87	4-78	13-82	0-99	7-99	22-86	5-74	37-73	10-70	17-73	18-85	7-72	4-85	25-55	0-52	4-31

Distributions of less than 5 cases were excluded.

TABLE XIV

DISTRIBUTIONS OF SCORES MADE ON ACHIEVEMENT TEST, LEVEL II, FORM B, BY SENIORS IN ACCOUNTING IN EIGHTY-SIX COLLEGES

Distributions of less than 5 cases were excluded.

TABLE XV

DISTRIBUTIONS OF SCORES MADE ON ORIENTATION TEST, FORM A, BY FIRST-YEAR STUDENTS OF ACCOUNTING IN FORTY-EIGHT COLLEGES

	134	96	12	26	13	140	4	19	129	80	29	110	59	60	63	7	32	3	158	8	156	86	65	20	89	132	25	38	10	70	73	154	53	92	74	116	72	84	30	46	61	71	48	57	125	68	173	174	
128-130																																																	128-130
Total	28	57	18	76	25	36	283	67	21	14	120	7	236	131	42	27	5	9	105	34	455	359	23	23	25	24	68	98	22	131	46	99	36	48	67	61	38	20	16	68	51	13	63	52	66	76	81	101	12	Total
Q3	86.0	85.8	82.0	78.0	71.5	80.0	73.8	70.3	67.5	58.0	73.3		67.7	66.1	67.0	62.5			64.4	72.7	65.5	62.9	61.0	50.0	55.8	58.4	60.5	55.0	60.7	57.0	59.4	60.0	56.0	61.0	57.3	48.0	51.7	51.0	52.2	56.0	54.0	56.0	51.9	48.8	36.0	Q3
Md	71.0	67.7	66.0	63.5	63.4	62.0	61.5	58.0	58.0	56.0	55.7	55.3	55.6	54.8	54.3	54.0	54.0	53.0	52.2	52.0	51.7	51.1	50.0	49.5	48.7	48.0	48.0	47.5	47.0	46.4	46.4	46.0	45.3	45.3	45.0	44.0	44.0	43.1	42.7	42.4	42.0	43.0	42.9	42.4	42.0	41.8	41.9	41.8	36.3	Md
Q1	56.0	57.0	58.0	52.0	46.5	48.0	51.7	45.0	53.0	44.0		39.1	43.0	42.1	46.0	46.3			38.7	43.0	40.1	41.5	43.0	37.7	32.0	37.3	33.3	39.0	34.1	35.8	36.7	28.8	37.0	31.7	38.0	30.0	35.2	33.6	36.0	32.9	33.2	36.0	28.0	28.1	36.0	Q1
Range	40-97	37-103	46-106	30-106	30-104	27-98	21-117	27-102	27-99	8-99	21-107	49-93	13-110	15-95	24-106	45-110	30-87	19-110	21-102	10-101	8-103	24-92	30-96	25-80	17-88	17-92	8-97	19-76	2-93	9-97	20-88	7-91	21-95	18-91	11-73	16-87	12-91	16-91	21-97	10-99	15-106	14-76	2-98	12-87	9-87	21-75	Range

Distributions of less than 5 cases were excluded.

TABLE XVI

DISTRIBUTIONS OF SCORES MADE ON ORIENTATION TEST, FORM A, BY SECOND-YEAR STUDENTS OF ACCOUNTING IN TWENTY-ONE COLLEGES

Score	12	3	20	60	8	103	101	129	132	59	144	67	102	48	86	65	61	46	173	84	71	Score
128-130																						128-130
124																						124
120																						120
116				1							1											116
112																		1				112
108			1									1										108
104				1							1											104
100				1	1					2												100
96		2		1		1				2	2	1				1						96
92	1	1		2						4	3											92
88		3				1		2	1	1	4	1				1	1	1			3	88
84	1	3		1		1	1	1	1	4	5	1				1	1			1		84
80	1	1	1	1	1	1	2	2	1	5	3	2	1				1		1	1		80
76		2	1		3	1		1	1	3	3	3			2	2	2	2			1	76
72	1	3		3	2	2	2	1		3	3	3	2		4		2		1	1		72
68			1	2	3		1	2		6	4	3	1	4	3	3			1	2	3	68
64		1		2	1	3	1	1	1	2	8	4	1	1	4	2		1	3	1	3	64
60	1				1	1	2	3		4	9	3	1		2		2	1	1		2	60
56		1		1	1	1		1	1	4	11	2	1	2	3	2	2	3	4		2	56
52		2	1	1				2		3	3	6	1	2	2	2	2	2	4		7	52
48				1		2	1			6	6	5	1	1	3	3	2	1	3	2	4	48
44				1			1	1	2	5	2	3				4	1	2		3	5	44
40					2		1			4	4				1	1	3	3	3	1	7	40
36							1			3				2	1	3	3	3	3	1	7	36
32				1						1	2			1	1	2	3	2	1	3	6	32
28					1						1				1		2	4	4		4	28
24																		1	1			24
20																	1		1			20
16																		1	1			16
12																			1	1		12
8																	1					8
4																						4
0-3																						0-3
Total	5	16	5	18	16	14	12	19	9	60	75	39	1	14	34	31	21	17	33	14	53	Total
Q3		86.7		95.0	77.3			80.5		80.8	80.3	73.7			71.3	69.7	61.5	58.3	59.8		57.5	Q3
Md	82.0	78.0	78.0	73.3	70.7	70.0	68.0	66.0	66.0	64.0	63.8	62.0	62.0	62.0	60.0	51.3	51.0	51.0	50.0	49.3	46.8	Md
Q1		70.0		65.0	60.0			55.5		49.3	56.3	51.8			47.6	42.8	36.3	36.3	36.3		37.3	Q1
Range	62-94	53-97	55-110	34-116	28-102	50-99	39-85	42-90	42-90	35-102	30-117	43-109	35-80	38-97	31-90	32-91	9-113	29-69	18-81	34-84	14-89	Range

Distributions of less than 5 cases were excluded.

TABLE XVII

DISTRIBUTIONS OF SCORES MADE ON ORIENTATION TEST, FORM A, BY THIRD-YEAR STUDENTS OF ACCOUNTING IN THIRTEEN COLLEGES

Score	175	132	167	107	120	86	59	109	164	61	71	84	106
128-130													
124													
120													
116													
112													
108													
104			1	1			1						
100				1		1	1			1			
96				1	1	1					1	1	
92		1				1	1				1		
88		1	2	1		2	8						
84	1		4	3			7			1	1		
80	1		2			4	2						
76			1	4	1	1	2	1			2		1
72	4	1	2	3	3		6	1			1		
68			1	2	1	1	5					1	2
64		1	3	3	1	2	14	2	1			1	
60			2	1		1	7				2		1
56	1	1	1	1	2	3	11	1		1	1		
52	1		1	2			5				1	1	2
48			1	3		1	4	1	1	2		1	
44						3	6	1	1	1	3	1	
40			2		1	1	5			2		1	2
36					1					1			2
32											1		
28											1		1
24													
20										1			
16													1
12												1	
8													
4													
0-3													
Total	8	5	23	26	11	22	85	7	6	13	10	7	12
Q3			85.3	84.7		83.5	77.5						
Md	74.0	74.0	73.0	73.3	70.0	68.0	65.3	65.0	62.0	51.0	50.0	50.0	48.0
Q1			61.5	62.0		56.7	56.5						
Range	55-85	56-93	41-104	50-105	36-96	43-103	40-105	45-78	45-102	21-97	28-68	15-96	19-97

Distributions of less than 5 cases were excluded.

TABLE XVIII

DISTRIBUTIONS OF SCORES MADE ON ORIENTATION TEST, FORM A, BY SENIORS IN ACCOUNTING IN FIFTY-SIX COLLEGES

The body of this table is a wide frequency-distribution matrix with score intervals on the left and right axes (128-130, 124, 120, 116, 112, 108, 104, 100, 96, 92, 88, 84, 80, 76, 72, 68, 64, 60, 56, 52, 48, 44, 40, 36, 32, 28, 24, 20, 16, 12, 8, 4, 0-3) and 56 college columns identified by the code numbers below. The summary statistics for each column are given in the following table.

College	Total	Q3	Md	Q1	Range
111	11	101.0			73-111
29	10	92.0			49-120
141	39	106.2	91.7	85.4	52-116
137	16	102.0	88.0	76.0	47-112
176	40	94.0	86.0	72.0	57-124
143	8	84.0			59-107
9	66	97.4	89.0	69.3	46-129
4	255	94.2	82.8	71.4	42-128
134	26	99.3	82.0	70.0	60-119
130	15	93.0	82.0	71.0	50-108
49	49	87.0	78.4	70.3	50-108
56	5	78.0			70-82
161	147	90.1	77.6	66.1	40-117
106	7	77.0			32-104
107	55	87.0	76.5	64.4	47-109
129	27	86.3	76.5	70.3	50-98
149	83	92.7	76.4	64.3	36-117
153	26	89.5	76.0	60.7	40-108
14	15	89.0	75.7	71.0	54-120
120	68	83.5	75.2	61.6	42-110
144	15	85.0	75.0	67.0	53-92
20	7	75.0			64-112
66	23	84.5	74.3	69.0	44-112
158	12	74.0			52-111
3	11	74.0			60-121
164	14	74.0			51-96
156	37	81.4	73.0	63.3	37-104
128	22	88.7	72.0	55.5	44-99
12	8	72.0			48-98
165	17	85.5	71.3	62.5	47-104
121	17	83.7	70.0	58.5	43-91
172	13	70.0			44-102
89	52	78.7	69.0	58.5	40-104
71	16	82.0		58.0	41-120
169	10	68.0			45-96
65	10	68.0			49-105
159	5	67.0			59-88
80	23	85.0	66.8	55.0	36-110
27	22	82.0	66.4	59.0	47-100
177	126	76.7	65.6	56.2	26-104
178	8	64.0			49-90
92	10	64.0			35-91
59	99	77.8	63.3	51.0	30-112
45	7				44-89
154	9				42-81
86	32	73.3	62.0	51.0	40-109
73	6	63.3			54-120
168	75	71.5	62.1	45.5	31-104
166	28	80.0	59.0	52.0	30-122
133	47	74.8	58.5	44.8	30-99
46	20	74.7	57.3	50.0	31-88
99	27	66.5	53.5	18.5	32-92
171	8	52.0			43-83
131	22	66.0	50.7	39.3	32-100
57	26	63.0	48.0	38.0	23-94
61	13	43.0			31-67

Distributions of less than 5 cases were excluded.