

IEA 1964 -- **First International Math Study (FIMS) Participated by 12 Countries**

Japan was the only Asian country took part in the IEA study.  
China was in the midst of Culture Revolution then.

**13-Year-Olds**

TABLE 1.1. *Total Mathematics Test Score Distributions<sup>a</sup> 13-Year-Olds.*

Population 1 a.

Score	Australia	Belgium	England	Finland	France	Japan	The Netherlands	Scotland	Sweden	United States	Total
0	1.0	0.6	3.0	0.1	1.0	0.6	0.5	1.0	1.0	3.0	1.0
1-5	13.0	8.0	21.0	1.0	13.0	7.0	10.0	17.0	15.0	19.0	16.0
6-10	14.0	7.0	13.0	7.0	15.0	7.0	15.0	14.0	19.0	16.0	13.0
11-15	13.0	9.0	12.0	11.0	17.0	7.0	11.0	14.0	19.0	14.0	14.0
16-20	12.0	8.0	10.0	16.0	16.0	8.0	10.0	12.0	15.0	13.0	12.0
21-25	12.0	11.0	7.0	21.0	12.0	8.0	12.0	10.0	11.0	11.0	10.0
26-30	10.0	11.0	7.0	17.0	8.0	8.0	9.0	9.0	9.0	8.0	9.0
31-35	9.0	11.0	6.0	12.0	6.0	11.0	8.0	7.0	5.0	6.0	8.0
36-40	7.0	12.0	6.0	9.0	5.0	11.0	7.0	6.0	3.0	5.0	6.0
41-45	4.0	9.0	5.0	4.0	3.0	9.0	5.0	4.0	2.0	2.0	4.0
46-50	2.0	7.0	5.0	1.0	2.0	9.0	5.0	3.0	0.8	1.0	3.0
51-55	2.0	4.0	2.0	0.6	1.0	8.0	2.0	1.0	0.1	1.0	2.0
56-60	0.6	2.0	2.0	0.0	0.3	5.0	2.0	1.0	0.1	0.3	1.0
61-65	0.3	0.4	0.6	0.0	0.3	1.0	4.0	0.3	0.0	0.1	0.4
66-70	0.1	0.0	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1
Mean	20.2	27.7	19.3	24.1	18.3	31.2	23.9	19.1	15.7	16.2	19.8
S.D.	14.0	15.0	17.0	9.9	12.4	16.9	15.9	14.6	10.8	13.3	14.9
Number of cases	2,917	1,686	2,949	747	2,409	2,050	429	5,256	2,554	6,231	27,228

<sup>a</sup> All scores have been corrected for guessing. Entries are percentages of the total group. Values greater than 1.0 are reported to the nearest whole percent.

TABLE 1.2. *Total Mathematics Test Score Distributions Grade Level Containing Most 13-Year-Olds.*

Population 1 b.

Score	Australia	Belgium	England	Finland	France	Germany	Israel	Japan	The Netherlands	Scotland	Sweden	United States	Total
0	1.0	0.5	4.0	0.1	1.0	0.4	0.6	0.6	0.3	1.0	1.0	2.0	1.0
1-5	12.0	4.0	15.0	2.0	9.0	4.0	4.0	7.0	7.0	13.0	16.0	16.0	10.0
6-10	13.0	6.0	10.0	3.0	12.0	6.0	4.0	7.0	12.0	12.0	20.0	14.0	11.0
11-15	15.0	6.0	11.0	7.0	16.0	11.0	6.0	7.0	14.0	12.0	18.0	14.0	12.0
16-20	15.0	8.0	9.0	12.0	16.0	13.0	8.0	8.0	17.0	12.0	15.0	14.0	12.0
21-25	14.0	10.0	6.0	22.0	13.0	15.0	9.0	8.0	16.0	10.0	11.0	12.0	12.0
26-30	11.0	13.0	7.0	22.0	9.0	16.0	11.0	8.0	11.0	9.0	9.0	10.0	10.0
31-35	9.0	13.0	8.0	14.0	8.0	15.0	12.0	11.0	9.0	8.0	5.0	7.0	10.0
36-40	5.0	13.0	7.0	10.0	5.0	8.0	13.0	11.0	6.0	7.0	3.0	5.0	7.0
41-45	3.0	12.0	6.0	4.0	5.0	6.0	12.0	9.0	3.0	6.0	1.0	3.0	6.0
46-50	1.0	8.0	7.0	3.0	2.0	3.0	9.0	9.0	3.0	5.0	0.4	1.0	4.0
51-55	0.3	4.0	5.0	0.5	3.0	2.0	7.0	8.0	1.0	3.0	0.1	1.0	3.0
56-60	0.1	2.0	2.0	0.0	0.5	0.3	3.0	5.0	0.1	1.0	0.0	0.4	1.0
61-65	0.1	0.5	2.0	0.0	0.2	0.0	2.0	1.0	0.1	0.4	0.0	0.1	0.5
66-70	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.1
Mean	18.9	30.4	23.8	26.4	21.0	25.4	32.3	31.2	21.4	22.3	15.3	17.8	23.0
S.D.	12.3	13.7	18.5	9.6	13.2	11.7	14.7	16.9	12.1	15.7	10.8	13.3	15.0
Number of Cases	3,078	2,645	3,089	841	3,449	4,475	3,232	2,050	1,443	5,718	2,828	6,544	39,392

## High School Third Year

### Population 3a -- Non-college Bound

TABLE 1.3. *Total Mathematics Test Score Distributions Mathematics Students in Final Secondary Year.*

Population 3 a.

Score	Australia	Belgium	England	Finland	France	Germany	Israel	Japan	The Netherlands	Scotland	Sweden	United States	Total
0	0.3	0.0	2.0	0.0	0.5	0.0	0.0	0.1	0.0	0.1	0.0	2.0	0.7
1-5	4.0	1.0	0.0	0.8	0.5	0.6	0.0	2.0	0.0	0.6	1.0	23.0	4.0
6-10	11.0	1.0	1.0	5.0	0.9	3.0	0.0	6.0	0.0	2.0	5.0	21.0	7.0
11-15	15.0	6.0	2.0	11.0	4.0	6.0	0.0	8.0	2.0	11.0	10.0	16.0	10.0
16-20	17.0	8.0	6.0	16.0	12.0	11.0	6.0	11.0	7.0	20.0	15.0	12.0	13.0
21-25	16.0	14.0	10.0	19.0	13.0	17.0	8.0	10.0	14.0	22.0	16.0	8.0	14.0
26-30	17.0	13.0	17.0	18.0	15.0	19.0	13.0	11.0	16.0	18.0	14.0	6.0	14.0
31-35	10.0	13.0	12.0	12.0	15.0	18.0	18.0	9.0	26.0	10.0	13.0	5.0	12.0
36-40	5.0	12.0	14.0	10.0	15.0	13.0	19.0	12.0	18.0	6.0	11.0	3.0	9.0
41-45	2.0	9.0	11.0	6.0	12.0	8.0	18.0	10.0	13.0	4.0	8.0	1.0	6.0
46-50	2.0	6.0	13.0	2.0	6.0	2.0	9.0	9.0	4.0	2.0	4.0	1.0	5.0
51-55	0.4	4.0	6.0	0.2	4.0	2.0	4.0	7.0	0.0	2.0	1.0	1.0	2.0
56-60	0.1	10.0	4.0	0.0	1.0	0.2	5.0	4.0	0.0	1.0	1.0	0.6	2.0
61-65	0.0	3.0	1.0	0.0	0.5	0.0	0.0	1.0	0.0	0.3	0.4	0.3	0.5
66-69	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Mean	21.6	34.6	35.2	25.3	33.4	28.8	36.4	31.4	31.9	25.5	27.3	13.8	26.1
S.D.	10.5	12.6	12.6	9.6	10.8	9.8	8.6	14.8	8.1	10.4	11.9	12.6	13.8
Number of Cases	1,089	519	967	369	222	649	146	818	462	1,422	776	1,568	9,007

### Population 3b -- College Bound

TABLE 1.4. *Total Mathematics Test Score Distributions Nonmathematics Students in Final Secondary Year.*

Population 3 b.

Score	Belgium	England	Finland	France	Germany	Japan	The Netherlands	Scotland	Sweden	United States	Total
0	0.4	3.0	0.2	3.0	0.0	0.4	0.0	0.5	0.0	5.0	1.0
1-5	2.0	2.0	1.0	1.0	0.0	7.0	0.0	4.0	11.0	38.0	10.0
6-10	4.0	9.0	7.0	3.0	1.0	10.0	10.0	11.0	24.0	24.0	11.0
11-15	9.0	12.0	14.0	9.0	6.0	10.0	15.0	14.0	32.0	13.0	12.0
16-20	19.0	19.0	18.0	14.0	11.0	11.0	15.0	20.0	22.0	8.0	14.0
21-25	22.0	21.0	25.0	18.0	19.0	12.0	21.0	17.0	8.0	5.0	15.0
26-30	17.0	14.0	18.0	20.0	26.0	12.0	17.0	16.0	1.0	4.0	13.0
31-35	14.0	11.0	8.0	16.0	20.0	11.0	11.0	12.0	2.0	1.0	10.0
36-40	8.0	5.0	6.0	11.0	12.0	9.0	11.0	4.0	0.0	1.0	6.0
41-45	3.0	2.0	2.0	5.0	5.0	7.0	0.0	1.0	0.0	0.2	4.0
46-50	1.0	1.0	0.7	0.0	0.0	6.0	0.0	0.3	0.0	0.0	2.0
51-55	0.3	0.3	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	1.0
56-58	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.3
Mean	24.2	21.4	22.5	26.2	27.7	25.3	24.7	20.7	12.6	8.3	21.0
S.D.	9.5	10.0	8.3	9.5	7.6	14.3	9.8	9.5	6.2	9.0	12.8
Number of Cases	1,004	1,782	399	192	643	4,372	50	2,123	222	2,042	12,828

### *Size of Class*

#### *Introduction and Results*

The hypothesis states: *The level of mathematics achievement is not related to size of class* (Hypothesis 04).

Although there has been considerable research in the past on the relationship between size of class and level of achievement, it was nevertheless decided to explore this problem again in the IEA study because of the number of school systems involved. Results of past research can be summarized as indicating that class size has not been an important factor. Marklund (1962) has an up-to-date summary of research in this field. In the IEA study, each student was asked to report the size of his mathematics class. The mean sizes of class and standard deviations for each population in each country are given in Tables 14.7 A, B, C, and D in Chapter 14 of Volume I. The range of average size is from 24 in Belgium to 41 in Japan for Populations 1 a and 1 b, from 12 in England to 41 in Japan for Population 3 a, and from 15 in Germany to 41 in Japan for Population 3 b.