

# FIRST NAME FREQUENCIES: AN EXERCISE IN DATA COLLECTION

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An important mathematical concept in a variety of grade levels involves the collection and organization of statistical data. It is a continuing challenge for teachers to find situations of interest to students. We shall present one such situation involving first name frequencies.

One of the authors is periodically assigned to teach large sections of a general education mathematics course. We isolated two academic years (1969-70 and 1990-91) in which this author taught about 900 students per year. For each of these years we then entered all the first names in a computer and produced alphabetized lists. We then counted the frequencies of each first name and produced ranked lists for both males and females for each of these two years.

Each of the samples was generally uniform with respect to age. Although there were some non-traditional students in each case, about 95% of the 1969-70 sample was born during the years 1945-51, while about 95% of the 1990-91 sample was born in the years 1967-72.

We grouped together different forms of the same name (e.g. Robert-Bob and Cynthia-Cindy) and minor variations of spelling (e.g. Michelle-Michele and Stephen-Steven). The following lists resulted, each restricted to 25 names:

Table 1

Largest Name Frequencies for Males and Females (1969-70)

<u>Rank</u>	<u>Male Name</u>	<u>Frequency</u>	<u>Rank</u>	<u>Female Name</u>	<u>Frequency</u>
1	Michael	25	1	Susan	36
2	John	17	2	Mary	26
3	David	16	3	Linda	23
4	James	14	4	Deborah	22
5	Stephen	13	5	Jean	20
6	Daniel	12	6	Katherine	19
7	Dennis	11	7	Patricia	16
7	Richard	11	8	Cheryl	14
7	Robert	11	9	Christine	13
7	Thomas	11	9	Pamela	13

Table 1, cont.

11	Gary	10	11	Carol	12
12	William	9	11	Rebecca	12
13	Douglas	7	11	Kathleen	12
13	Mark	7	14	Judy	11
13	Paul	7	14	Karen	11
16	Dean	6	14	Barbara	11
16	Kenneth	6	17	Diane	10
16	Larry	6	17	Jane	10
16	Ronald	6	19	Joan	9
20	Charles	5	20	Cindy	8
20	Randy	5	20	Connie	8
22	Allen	4	20	Vickie	8
22	Bruce	4	23	Sandra	7
22	Scott	4	23	Julie	7
22	Terry	4	23	Lynn	7

Table 2

Largest Name Frequencies for Males and Females (1990-91)

<u>Rank</u>	<u>Male Name</u>	<u>Frequency</u>	<u>Rank</u>	<u>Female Name</u>	<u>Frequency</u>
1	Michael	19	1	Jennifer	35
2	Scott	16	2	Christine	25
3	John	15	3	Amy	23
4	Brian	14	4	Kimberly	14
5	Chad	11	4	Angela	14
6	Christopher	10	6	Michelle	14
6	Jeffrey	10	7	Julie	13
6	Matthew	10	8	Sarah	10
9	Douglas	9	8	Stephany	10
9	Erik	9	10	Mary	9
9	Jason	9	11	Dawn	8
9	Stephen	9	11	Laurie	8
9	Bradley	9	11	Lisa	8
14	Richard	8	11	Tammy	8
14	Todd	8	15	Cindy	7
16	Anthony	7	15	Stacie	7
16	Thomas	7	17	Anne	6
18	Corey	6	17	Elizabeth	6
18	William	6	17	Deborah	6
18	David	6	17	Heather	6
21	Daniel	5	17	Jodi	6
21	James	5	17	Lori	6
21	Kevin	5	17	Patricia	6
21	Robert	5	17	Rebecca	6
21	Ryan	5	17	Teresa	6

We note the following:

1. Names appearing on the 1969-70 list but not the 1990-91 list:

Item #1 cont.

<u>Males</u>	<u>1969-70 Rank</u>	<u>Females</u>	<u>1969-70 Rank</u>
Dennis	7	Susan	1
Gary	11	Linda	3
Mark	13	Jean	5
Paul	13	Katherine	6
Dean	16	Cheryl	8
Kenneth	16	Pamela	9
Larry	16	Carol	11
Ronald	16	Kathleen	11
Charles	20	Judy	14
Randy	20	Karen	14
Allen	22	Barbara	14
Bruce	22	Diane	17
Terry	22	Jane	17
		Joan	19
		Connie	20
		Vickie	20
		Sandra	23
		Lynn	23

2. Names appearing on the 1990-91 list but not on the 1969-70 list:

<u>Males</u>	<u>1990-91 Rank</u>	<u>Females</u>	<u>1990-91 Rank</u>
Brian	4	Jennifer	1
Chad	5	Amy	3
Christopher	6	Kimberly	4
Jeffrey	6	Angela	4
Matthew	6	Michelle	6
Erik	9	Sarah	8
Jason	9	Stephany	8
Bradley	9	Dawn	11
Todd	14	Laurie	11
Anthony	16	Lisa	11
Corey	18	Tammy	11
Kevin	21	Stacie	15
Ryan	21	Anne	17
		Elizabeth	17
		Heather	17
		Jodi	17
		Lori	17
		Teresa	17

3. Names appearing on both the 1969-70 and 1990-91 lists:

<u>Males</u>	<u>69-70 Rank</u>	<u>90-91 Rank</u>	<u>Females</u>	<u>69-70 Rank</u>	<u>90-91 Rank</u>
Michael	1	1	Mary	2	10
John	2	3	Deborah	4	17
David	3	18	Patricia	7	17
James	4	21	Christine	9	2

Item #3 cont.

Stephen	5	9	Rebecca	11	17
Daniel	6	21	Cindy	20	15
Richard	7	14	Julie	23	7
Robert	7	21			
Thomas	7	16			
William	12	18			
Douglas	13	9			
Scott	22	2			

4. Both males and females showed a considerable "turnover" in names over the 21 years between the two surveys, with this trend the most pronounced for females. While 13 of the top 25 male names were new in 1990-91, a whopping 18 out of the 25 female names were new in the second survey:

The 1st (Susan), 3rd (Linda), 5th (Jean), 6th (Katherine), 8th (Cheryl) and 9th (Pamela) most frequent 1969-70 female names (from the top ten) were absent from the 1990-91 list; the 1st (Jennifer), 3rd (Amy), 4th (Kimberly and Angela), 6th (Michelle) and 8th (Sarah and Stephany) most frequent 1990-91 female names (from the top ten) were absent from the 1969-70 list. For the slightly more stable male names, Michael retained its top ranking in both lists; John slipped only from 2nd to 3rd. Only one of the top ten 1969-70 male names (Dennis - 7th) was absent from the 1990-91 list, although many of the others lost popularity in 1990-91. For the 1990-91 list, the 4th (Brian), 5th (Chad), 6th (Christopher, Jeffrey and Matthew) and 9th (Erik, Jason and Bradley) were newcomers in the top ten.

The reader and his/her classes are encouraged to conduct further surveys of this type. Examples might include data collected separately for each grade level in your school, a comparison of students' names with those of their parents, and a comparison of names in different neighborhoods of a town. Graphs for these data also might be instructive.

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Almost all positive integers are greater than 1,000,000,000,000.

Richard Courant and Herbert Robbins  
*What is Mathematics?*  
Oxford University Press, 1941.