Two-way table distributions

Observed counts

Color \ Type	Plain	Peanut	Peanut butter	Row total
Blue	87	27	28	142
Brown	86	23	42	151
Green	92	27	34	153
Orange	75	29	24	128
Red	58	20	21	99
Yellow	64	27	52	143
Column total	462	153	201	816

Joint and marginal distributions: divide by table total

Color \ Type	Plain	Peanut	Peanut butter	Row total
Blue	0.1066	0.0331	0.0343	0.1740
Brown	0.1054	0.0282	0.0515	0.1850
Green	0.1127	0.0331	0.0417	0.1875
Orange	0.0919	0.0355	0.0294	0.1569
Red	0.0711		0.0257	
Yellow	0.0784	0.0331	0.0637	0.1752
Column total	0.5662		0.2463	1.0000

1. Compute the missing joint proportion in the body of the table. Write a sentence that gives this value and its meaning in context.

2. Compute the missing marginal proportion in the rightmost column of the table. Write a sentence that gives this value and its meaning in context.

3. Compute the missing marginal proportion in the bottom row of the table. Write a sentence that gives this value and its meaning in context.

Conditional distribution on type: divide by column totals

Color \ Type	Plain	Peanut	Peanut butter	Row total
Blue	0.1883	0.1765	0.1393	0.1740
Brown	0.1861	0.1503	0.2090	0.1850
Green	0.1991	0.1765	0.1692	0.1875
Orange	0.1623	0.1895	0.1194	0.1569
Red	0.1255		0.1045	0.1213
Yellow	0.1385	0.1765	0.2587	0.1752
Column total	1.0000	1.0000	1.0000	1.0000

4. Compute the missing conditional proportion in the body of the table. Write a sentence that gives this value and its meaning in context.

Conditional distribution on color: divide by row totals

Color \ Type	Plain	Peanut	Peanut butter	Row total
Blue	0.6127	0.1901	0.1972	1.0000
Brown	0.5695	0.1523	0.2781	1.0000
Green	0.6013	0.1765	0.2222	1.0000
Orange	0.5859	0.2266	0.1875	1.0000
Red	0.5859	0.2020	0.2121	1.0000
Yellow	0.4476	0.1888	0.3636	1.0000
Column total	0.5662	0.1875	0.2463	1.0000

Note: The conditional distribution on color is not particularly meaningful here since the full sample of size 816 was collected in three subsamples. (In other words, this is a *stratified sample*.)