

Psyc 2111, Homework 12

Imagine you grew up in a family with five children. Every night, your parents choose a different kid to set the table for dinner. You wonder whether they're being fair, so over five weeks you keep track of how many times each of you is chosen.

1. Fill in the table what the frequencies would be if the distribution was perfectly fair.

Eunice	Clarence	Matilda	Horace	Betty	Total
7	7	7	7	7	35

2. Thinking your parents might be biased between boys and girls, you add up all the times they chose a boy and all the times they chose a girl. Write what the frequencies would be if they were being fair, remembering there are 3 girls and 2 boys.

Boys	Girls	Total
14	21	35

3. Setting the table is more work on weekends, so you keep track of how often each kid is chosen, separately for weekdays and weekends. Write what the frequencies would be if the overall distribution were fair and if each kid had the same proportion of weekdays and weekends.

Days	Eunice	Clarence	Matilda	Horace	Betty	Total
Weekdays	5	5	5	5	5	25
Weekends	2	2	2	2	2	10
Total	7	7	7	7	7	35

4. Write what the frequencies would be if your parents had no bias between boys and girls (as in Question 2) and if boys and girls had the same proportion of weekdays and weekends.

Days	Boys	Girls	Total
Weekdays	10	15	25
Weekends	4	6	10
Total	14	21	35

5. Finally, imagine there's no overall bias between boys and girls, so that the Total row is the same as in Question 4, but your parents tend to choose a girl on weekdays and to choose a boy on weekends. Write what the frequencies might be.

Days	Boys	Girls	Total
Weekdays	5	20	25
Weekends	9	1	10
Total	14	21	35

Other answers are possible