Critical values of the Chi-square distribution with d degrees of freedom

Probability of exceeding the critical value

d	0.05	0.01	0.001	d	0.05	0.01	0.001
1	3.841	6.635	10.828	11	19.675	24.725	31.264
2	5.991	9.210	13.816	12	21.026	26.217	32.910
3	7.815	11.345	16.266	13	22.362	27.688	34.528
4	9.488	13.277	18.467	14	23.685	29.141	36.123
5	11.070	15.086	20.515	15	24.996	30.578	37.697
6	12.592	16.812	22.458	16	26.296	32.000	39.252
7	14.067	18.475	24.322	17	27.587	33.409	40.790
8	15.507	20.090	26.125	18	28.869	34.805	42.312
9	16.919	21.666	27.877	19	30.144	36.191	43.820
10	18.307	23.209	29.588	20	31.410	37.566	45.315

Example 1

Does the assumption of Poisson distribution seem appropriate as a model for following number of defects observed:

    no defects: 35

    1 defect: 11

    2 defects: 11

    3 defects: 3

Example 2

	Blue	Green	Pink	
Boys	100	150	2̶0̶ 50	300
Girls	20	30	1̶8̶0̶ 150	200
	120	180	200	N = 500

Use $\alpha = 0.05$

H_0; For the population of elementary school students, gender

    and favorite color are not related.

H_1; For the population of elementary school students, gender

    and favorite color are related.