Math 3026–Additional Exercises

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1. Calculate the frequencies in the following table assuming that the variables A and B are independent.

	A1	A2	Total
B1			60
B2			100
B3			
Total		150	200

2. 60 pacients are randomly divided into two groups. Each group is given a different medicine and the following results obtained.

	side effect	no side effect	total
medicine A	10	20	30
medicine B	5	25	30
total	15	45	60

Is there evidence, at the 0.5 level of significance, that the number of side effects is independent of the choice medicine?

3. Given the following data, is there evidence, at the .05 level, that

   (a) Aspirin is superior to tylenol?

   (b) That medicine is superior to the placebo?

	aspirin	tylenol	placebo	Total
Improvement	20	10	10	40
No Improvement	40	50	110	200

4. The following table shows 100 absence reports for Math 3026.

Mon	Tue	Wed	Th	Fri
31	10	6	24	29

Test, at the 0.05 level, the hypothesis that the probability of a student absence is independent of day.

5. (a) Find the percentile P_{25} of the distribution $t(15)$.

   (b) Find the percentile P_{95} of the distribution $\chi^2(5)$.