

A.P. Statistics
Assignment 10.3

Remember to show your thinking through your work.

1. What does the chi-squared test of independence really test?

2. When working with a two-way table, describe how you find the expected counts for each cell in the table.

3. Democrats and Republicans were surveyed for their opinions on gun control, and the results are shown in this table:

Observed	Favor	Oppose	Unsure	Total
Democrat	44	48	18	110
Republican	32	48	10	90
Total	76	96	28	200

- a. Fill in the table below with the expected counts.

Expected	Favor	Oppose	Unsure	Total
Democrat				110
Republican				90
Total	76	96	28	200

- b. Based on this sample, does a person's opinion on gun control depend on party affiliation, at the .05 level of significance?

4. There are four major blood types in humans: O, A, B, and AB. In a study conducted using blood specimens from the Blood Bank of Hawaii, individuals were classified according to blood type and ethnic group. The ethnic groups were Hawaiian, Hawaiian-white, Hawaiian-Chinese, and white. Assume that the blood bank specimens are random samples from the Hawaiian populations of these ethnic groups.

Ethnic group → Blood Type	Hawaiian	Hawaiian white	Hawaiian Chinese	White
O	1,903	4,469	2,206	53,759
A	2,490	4,671	2,368	50,008
B	178	606	568	16,252

AB	99	236	243	5,001
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a. Fill in the table below with the expected counts.

Ethnic group → Blood Type	Hawaiian	Hawaiian white	Hawaiian Chinese	White
O				
A				
B				
AB				

b. Is there evidence to conclude that blood type and ethnic group are related?
Perform a complete test.

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