Use JMP to answer the following questions. Instructions for how to find the relevant JMP output are included in Chapter 12 of your Lecture Guide.

1. The following data on gender and highest earned degree were collected for individuals with a college degree in the United States. A researcher wonders if there is an association between gender and highest degree earned. Conduct a χ^2 test of independence at the $\alpha = 0.05$ level to investigate the researcher's hypothesis.

	Bachelor's	**Master's**	**Professional**	**Doctorate**	**Total**
Women	644	230	32	18	924
Men	506	154	40	26	726
Total	1150	384	72	44	1650

(a) State the appropriate **hypotheses** in this context.

(b) What is the **expected count** for women with a master's degree?

(c) Are the **conditions** for the chi-square test of independence of gender and highest degree earned met?

(d) Calculate the chi-square **test statistic**.

(e) Find the **approximate p-value** using the chi-square table. Include a sketch.

(f) What is the **exact p-value** from your JMP output?

(g) State your **conclusion** in context.

2. The following data were compiled on medals won by different countries in several years of the Olympics.

	Bronze	**Silver**	**Gold**
China	26	28	26
Great Britain	17	23	27
Russia	19	18	19
United States	38	37	46
Other	260	211	189

Investigate whether there is an association between country and type of medal won. Use a significance level of $\alpha = 0.05$.

(a) State the appropriate **hypotheses** in this context.

(b) What is the **expected count** for gold medals from the United States?

(c) Are the **conditions** for the chi-square test of independence of gender and highest degree earned met?

(d) Calculate the chi-square **test statistic**.

(e) Find the **approximate p-value** using the chi-square table. Include a sketch.

(f) What is the **exact p-value** from your JMP output?

(g) State your **conclusion** in context.