

**Lab Assignment #26**

This lab is due at 10:01 AM on Monday 5/13 and is worth 6 points. This may be done individually, or in a group of 2 or 3 people.

Write a 1-sentence summary for each problem. Write hypotheses for each hypothesis test problem.

1) The marshmallows in a box of Fortunate Shapes cereal are classified by color and shape. See the following table:

	Pink	Seafoam	Yellow	Azure	Auburn
Clover	19	18	27	30	29
Bean	40	31	51	48	42
Acorn	10	8	9	18	19

Test at the 5% level whether color and shape are independent.

2) Test the claim that there is a relationship between size and type of adult salmon in Alaska. Use  $\alpha = 5\%$ . Small salmon are classified as under 3 pounds, medium salmon are between 3 and 6 pounds, and large salmon are over 6 pounds. Use the sample data. Which sizes and salmon types are most suspicious?

Type	Small	Medium	Large
King	39	69	28
Pink	18	60	29
Silver	58	102	79

3) Do residents of various states have equal proportions of people who believe in aliens? **Two hundred** residents of four states were asked: "Do you believe that aliens have landed on Earth?" See data.

Nevada: 133 yes, 67 no

Connecticut: 87 yes, 113 no

Kentucky: 94 yes, 106 no

Ohio: 102 yes, 98 no

a) State your null and alternative hypotheses.

b) Test the claim at the 5% level that residents of these 4 states have the same proportion of belief in aliens.

c) Which state's result is most suspicious?