

Math 1070 - Spring 2011 - Take Home Final Exam. Due Thursday May 5, 2011.

(The data files for 1.25 and 4.26 are available at the course website.)

1.25 What color is your car? The most popular colors for cars and light trucks change over time. Silver passed green in 2000 to become the most popular color worldwide, then gave way to shades of white in 2007. Here is the **distribution** of colors for vehicles sold in North America in 2007:¹⁴

Color	Popularity
White	19%
Silver	18%
Black	16%
Red	13%
Gray	12%
Blue	12%
Beige, brown	5%
Other colors	

Fill in the percent of vehicles that are in other colors. Make a graph to display the **distribution** of color popularity.

4.26 Data on dating. A student wonders if tall women tend to date taller men than do short women. She measures herself, her dormitory roommate, and the women in the adjoining rooms; then she measures the next man each woman dates. Here are the data (heights in inches):

Women (x)	66	64	66	65	70	65
Men (y)	72	68	70	68	71	65

- (a) Make a **scatterplot** of these data. Based on the **scatterplot**, do you expect the **correlation** to be positive or negative? Near ± 1 or not?
- (b) Find the **correlation** r between the heights of the men and women. Do the data show that taller women tend to date taller men?

1. In the United States there is a strong relationship between smoking and education with well-educated people less likely to smoke. A study in France included a sample of 459 men who were selected at random from men who had visited a health center for a routine checkup. Education is classified into three categories corresponding to the highest level of education and smoking status is classified into four categories.

<u>Education</u>	Smoking Status				<u>Total</u>
	<u>Nonsmoker</u>	<u>Former</u>	<u>Moderate</u>	<u>Heavy</u>	
Primary school	56	54	41	36	187
Secondary school	37	43	27	32	139
<u>University</u>	53	28	36	16	133
<u>Total</u>	146	125	104	84	459

Does this data show significant evidence of association between smoking and education in the France? (show the work, not just the values of the chi square and p-value)

If so, then do a simple follow up analysis.