Name _____ **School** _____

Elementary Data Analysis
Math Field Day 2012

1. A high school class decides to raise some money by conducting a raffle. The students plan to sell 2000 tickets at $1 apiece. They will give one prize of $100, two prizes of $50, and three prizes of $25.

_____ If you plan to purchase one ticket, what are your expected net winnings?

2. The federal government requires a car manufacturer to have a minimum miles per gallon (mpg) average over the cars it makes. Suppose that the models and mpg's for a manufacturer are Corsair (11 mpg), Futura (10 mpg), Retro (17 mpg), and Envy (24 mpg). Twenty percent of the cars sold are Corsairs, 30% are Futuras, 40% are Retros, and 10% are Envys.

_____ Find the average mpg for this manufacturer.

3. Al and Joe are two county sheriff's deputies assigned to watch for traffic violations. Their arrest and conviction records for May and June are shown below.

	May		June	
	Arrests	Convictions	Arrests	Convictions
Al	10	2	80	40
Joe	90	30	20	12

_____ a) Who had the best conviction percentage in May?

_____ b) Who had the best conviction percentage in June?

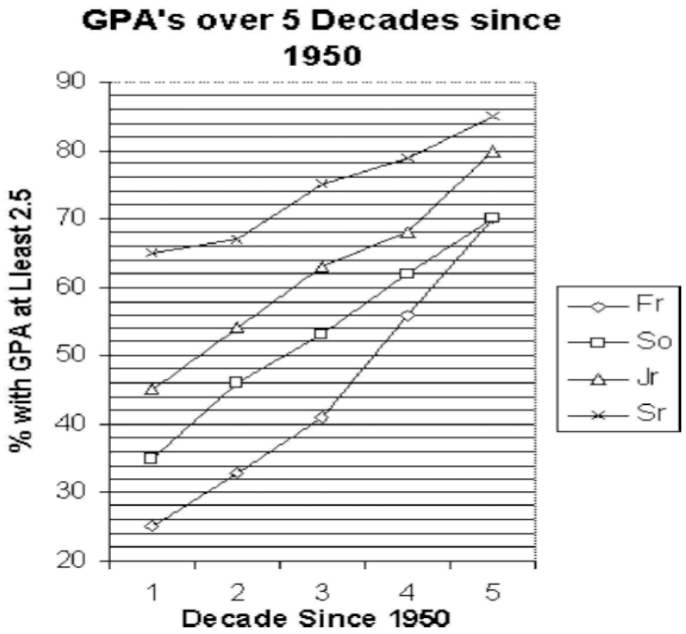
_____ c) Who had the best conviction percentage overall?

4. A company that manufactures windows has three factories. Factory 1 produces 30% of the company's windows, Factory 2 produces 60%, and Factory 3 produces 10%. One percent of the windows produced by Factory 1 are mislabeled, 0.5% of those produced by Factory 2 are mislabeled, and 2% of those produced by Factory 3 are mislabeled.

_____ If you purchase one window manufactured by this company, what is the probability that the window is mislabeled?

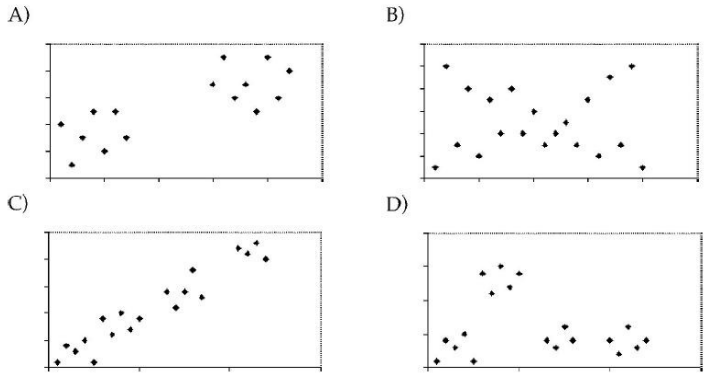
5. The workers in a small company have a mean salary of $28,000 per year with a standard deviation of $8,100 per year. If every employee gets a $900 per year raise, the new salary would have a mean of _____ dollars with a standard deviation of _____dollars. In instead, every employee gets a 5% raise then the new salaries would have a mean of _____ dollars with a standard deviation of _____ dollars per year.

6. Identify the class in which 50% or more students had 2.5 or better GPA's for all five decades.



A) Sr B) Jr C) So D) Fr

7. _____ Which graph that has two groups of data, correlations within each group, but no correlation among all the data?



8. In testing a new light bulb design, 6 bulbs were left on until they burned out or 2000 hours whichever came first. One bulb had not burned out by the end of the test, so 2000 hours was recorded for that bulb.

_____ If the testers had waited for that bulb to burn out, what would have happened to the **mean** and **median** lives of the bulbs?

A) Neither mean nor median would have changed.
B) Both mean and median would increase.
C) The mean would increase, but the median would not change.
D) The median would increase, but the mean would not change.