AP Statistics Summer Packet

Name: _____ Deadline: **Wednesday August 31, 2011**

1. Define: categorical variable: _____
2. Define: quantitative variable: _____

Classify each of the following attributes as either categorical or numerical. For those that are numerical determine whether they are discrete or continuous.

3. Number of students in a class of 35 who turn in a term paper before the due date
4. Gender of the next baby born at a particular hospital
5. Amount of fluid (oz) dispensed by a machine used to fill bottles with soda pop
6. Thickness of the gelatin coating of a vitamin E capsule
7. Birth classification (only child, firstborn, middle child, lastborn) of a math major
8. Brand of computer purchased by a customer
9. State of birth for someone born in the United States
10. Price of a textbook
11. Concentration of a contaminant (micrograms/cm^3) in a water sample
12. Zip code
13. Actual weight of coffee in a 1-lb can

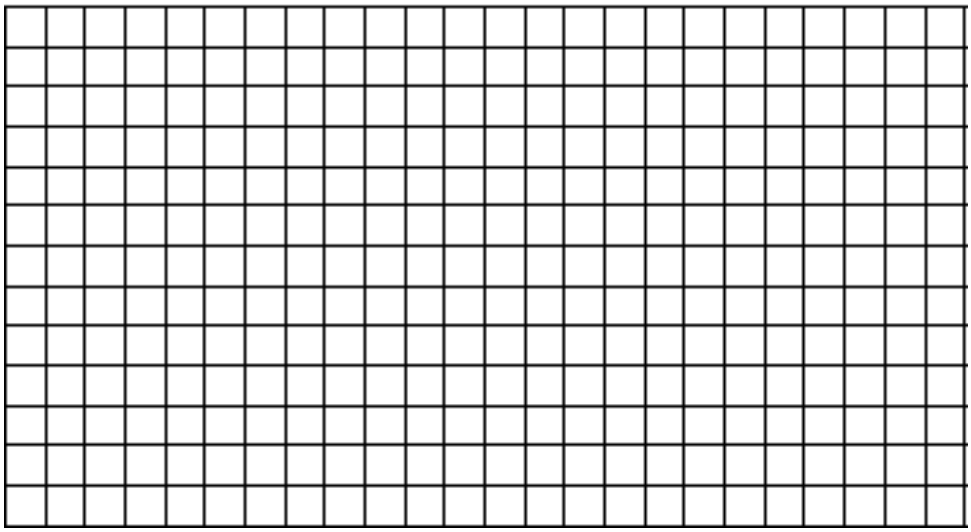
The data below represents the age of 12 randomly selected faculty members at a local high school.

25	26	22	35	47	59
32	62	34	23	40	24

14. Is this data categorical or quantitative?
15. What is the mean age of faculty members at the school? Interpret the mean in the context of the problem.

16. What is the first quartile of ages at the local high school? Interpret the first quartile in the context of the problem.

17. Create an appropriate graphical display of the data. Be sure to label.



The table below represents the food preferred by students at a local high school from 50 randomly selected students.

Food	Frequency
Chicken Sandwich	15
Pizza	18
Spaghetti	6
Hamburgers	11

18. Is this data categorical or quantitative?

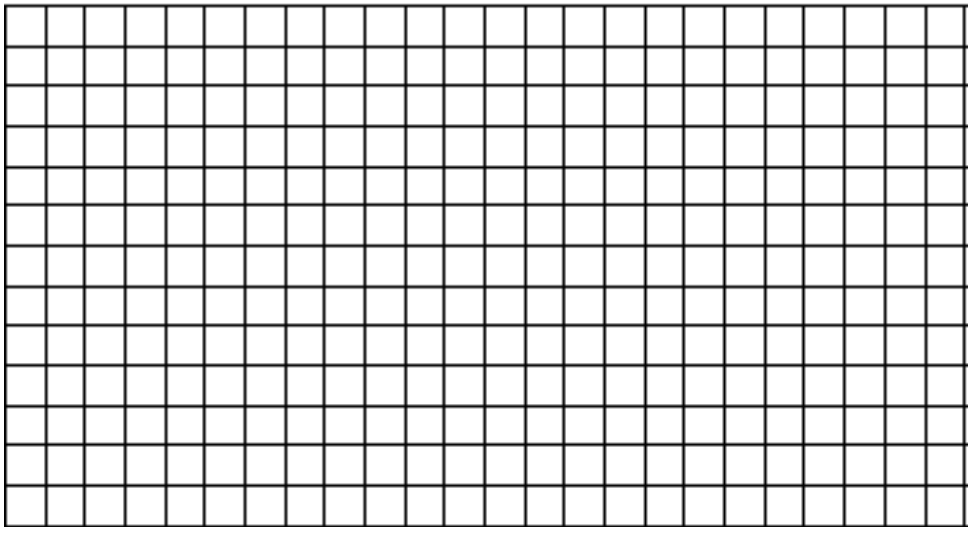
19. What is the probability of a randomly selected student choosing pizza as their preferred food?

20. What is the probability of a randomly selected student choosing a hamburger **or** chicken sandwich as their preferred choice?

21. What is the probability of a randomly selected student **not** choosing Spaghetti?

22. If there are 2,000 students at the school, how many would you expect to choose the chicken sandwich as their preference?

23. Create an appropriate graphical display of the data. Be sure to label.

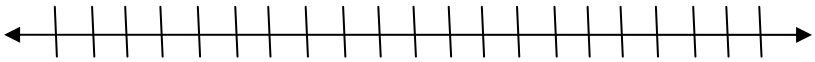


24. Create a stem-and-leaf plot, a box plot, and a dot plot for the following data.

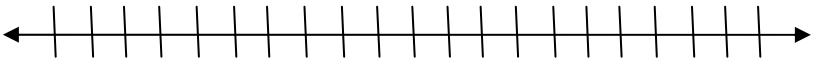
25 10 11 25 13 26 32 27 10 20 15 25 15

Stem-and-leaf plot:

Box and Whiskers Plot:



Dot plot:



25. What are the following statistics for the data in problem #24:

Mean: _____ Range: _____ First Quartile (Q1): _____

Median: _____ Third Quartile (Q3): _____

Mode: _____ Interquartile Range (IQR): _____

26. The table below represents the average body temperature in degrees Celsius of 9 insects at a given air temperature.

Air	25.7	30.4	28.7	31.2	31.5	26.2	30.1	31.5	18.2
Body	27.0	31.5	28.9	31.0	31.5	25.6	28.4	31.7	18.7

a. Which variable is your independent variable? Explain your answer in the context of the problem.

b. Use your graphing calculator to create a scatterplot of the data above and calculate the line of best fit. y = _____

c. Does the line of fit appear to be a good model for the data? Why or why not?

d. What is the slope of the line in the context of the problem?

e. Based on your line of fit, what is the average body temperature of an insect when the air temperature is 27.0 degrees Celsius?

f. Based on your line of fit, what is the average air temperature if an insect has a body temperature of 29.5 degrees Celsius?