

AP Stats Summer Work:

Watch the AP Daily Videos for unit one:

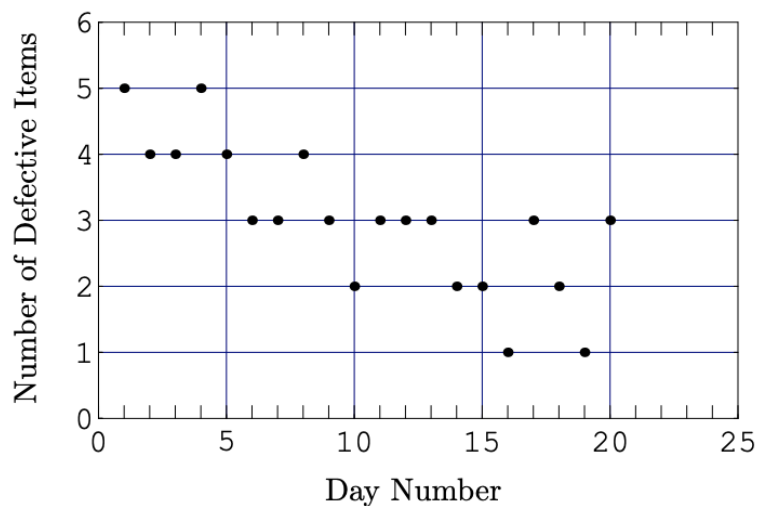
Answer the following FRQs in a Composition Notebook:



1998 AP STATISTICS

-7-

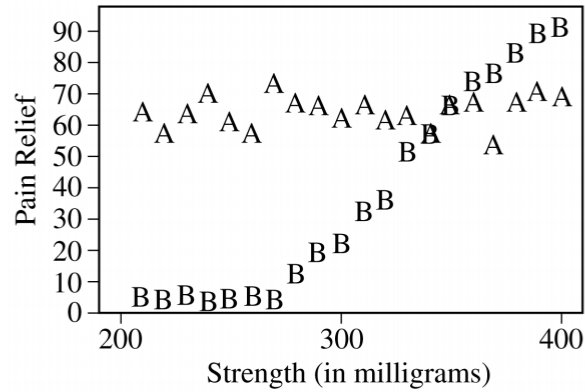
2. A plot of the number of defective items produced during 20 consecutive days at a factory is shown below.



- Draw a histogram that shows the frequencies of the number of defective items.
- Give one fact that is obvious from the histogram but is not obvious from the scatterplot.
- Give one fact that is obvious from the scatterplot but is not obvious from the histogram.

- Two pain relievers, A and B, are being compared for relief of postsurgical pain. Twenty different strengths (doses in milligrams) of each drug were tested. Eight hundred postsurgical patients were randomly divided into 40 different groups. Twenty groups were given drug A. Each group was given a different strength. Similarly, the other twenty groups were given different strengths of drug B. Strengths used ranged from 210 to 400 milligrams. Thirty minutes after receiving the drug, each patient was asked to describe his or her pain relief on a scale of 0 (no decrease in pain) to 100 (pain totally gone).

The strength of the drug given in milligrams and the average pain rating for each group are shown in the scatterplot below. Drug A is indicated with A's and drug B with B's.



(a) Based on the scatterplot, describe the effect of drug A and how it is related to strength in milligrams.

(b) Based on the scatterplot, describe the effect of drug B and how it is related to strength in milligrams.

(c) Which drug would you give and at what strength, if the goal is to get pain relief of at least 50 at the lowest possible strength? Justify your answer based on the scatterplot.

1. The summary statistics for the number of inches of rainfall in Los Angeles for 117 years, beginning in 1877, are shown below.

N	MEAN	MEDIAN	TRMEAN	STDEV	SE MEAN
117	14.941	13.070	14.416	6.747	0.624

MIN	MAX	Q1	Q3
4.850	38.180	9.680	19.250

- (a) Describe a procedure that uses these summary statistics to determine whether there are outliers.
- (b) Are there outliers in these data? _____
Justify your answer based on the procedure that you described in part (a).
- (c) The news media reported that in a particular year, there were only 10 inches of rainfall. Use the information provided to comment on this reported statement.

2002 AP[®] STATISTICS FREE-RESPONSE QUESTIONS (Form B)

5. At a school field day, 50 students and 50 faculty members each completed an obstacle course. Descriptive statistics for the completion times (in minutes) for the two groups are shown below.

	Students	Faculty Members
Mean	9.90	12.09
Median	9.25	11.00
Minimum	3.75	4.50
Maximum	16.50	25.00
Lower quartile	6.75	8.75
Upper quartile	13.75	15.75

- (a) Use the same scale to draw boxplots for the completion times for students and for faculty members.
- (b) Write a few sentences comparing the variability of the two distributions.
- (c) You have been asked to report on this event for the school newspaper. Write a few sentences describing student and faculty performances in this competition for the paper.