

AP STAT DEBRIEF – Question 1

Dr. Debbie M. Kohler, Instructor
Kennesaw State University

2015 QUESTION 1: Descriptive Analyses and Graphs

Please view the questions here:

http://media.collegeboard.com/digitalServices/pdf/ap/ap15_fraq_statistics.pdf

Question 1: INTENT OF THE QUESTION:

This is a question whose main intent was to assess a student's ability to compare the features of two distributions of data from boxplots and identify statistical measures that are important in data and decision making.

This question gave background information about two companies as well as two box and whisker plots—one for each company.

Question 1 Answer:

- a. Write a few sentences comparing the distributions of the yearly salaries at each of the companies.
 - i. **SOLUTION REQUIREMENTS:** Here students must be careful to actually compare the two distributions and not simply state information about each of the two companies. Students were expected to comment on four specific characteristics:
 1. Center
 2. Spread
 3. Outliers
 4. Context
 - ii. **GRADING:** Commenting on all 4 aspects correctly earned an “E” Commenting on 3 of the 4 aspects earned a “P” and anything less received an “I”. If a student commented on shape, it was ignored because a box and whisker is not adequate to truly determine shape.
 - iii. **COMMON MISTAKES/NOTES:**
 - Failure to actually compare the two distributions ---only stating information about each.
 - Failure to describe center
 - Failure to use context
 - Working on the question, but failing to identify all the basics---SOCS—shape, outliers, center spread. Although shape was not required or graded, this acronym is very useful in assuring that the students get all the information that is needed (except context---which should be preached!)

- b.** The second part of the question focused on the salary being offered to someone as a starting salary. Suppose that both corporations offered you a job for \$36,000 as an entry level position.

- **SOLUTION REQUIREMENTS**
 1. In part (b-1) a relevant statistical measure is identified or describe or a relevant statistical comparison is provided that supports the choice of Company A.
 2. In part (b-1) an explanation is given for why the measure or comparison is relevant.
 3. In part (b-2) a relevant statistical measure is identified or describe or a relevant statistical comparison is provided that supports the choice of Company B.
 4. In part (b-2) an explanation is given for why the measure or comparison is relevant.
- **GRADING:**

E – all 4 components addressed
P – 2 or 3 of the components addressed
I - 1 or 0 components addressed
- **COMMON MISTAKES/NOTES**
 - Failing to provide a relevant statistical measure and not re-coupling this in the explanation. If a student did not give a statistical measure, but the explanation for the comparison could logically lead one to a statistical measure, components the student could still get credit for #2 and #4 above. Example: “At Corporation A, I have the potential to earn a higher salary”.
 - Failure to give relevance to the choice. It was not enough to simply give a statistical measure as to why one would choose each company. There must be a connection and relevance of the decision.

SCORING FOR QUESTION 1:

- 4: EE --- both parts essentially correct**
- 3: EP or PE - one part essentially correct and one part partially correct**
- 2: EI, IE, PP – one part essentially correct and the other incomplete or 2 partially corrects**
- 1: PI or IP – one partially correct and one incorrect**

Please visit the GAAPMT website, www.gaapmt.org for analyses of all six 2015 AP Statistics free response questions.