2017 Statistics Review
John Glenn College of Public Affairs

1.Governments can be divided into three different types – unitary, federal, and confederations – depending upon where the concentration of power is located. This would be considered which level of measurement (nominal, ordinal, interval, or ratio)?

2. Which measure of central tendency cuts a distribution in half when the scores area arranged from high to low?

3. A distribution of income is highly skewed. Which measure of central tendency is likely best for purposes of characterizing income?

4. A local city is considering building a new light rail system to alleviate downtown traffic. To find out how many people would make use of the system, a government worker interviewed a random sample of commuters. The following are the number of miles driven each week by 10 people who said they would use the train instead of driving to work:

15 35 30 42 18 75 60 45 20 90

Calculate the:
a) Range
b) Mean
c) Median
d) Variance
e) Standard Deviation

5. An analyst has collected the following data on the number of complaints about garbage collection made over the past 10 years. Calculate the mean, median, and mode. Which measure of central tendency are you most likely to use, and why?

(data on next page)

Year	Number of complaints
2000	34
2001	42
2002	24
2003	43
2004	20
2005	45
2006	28
2007	42
2008	38
2009	40

6. You wanted to investigate the productivity of two departments: Econ and Public Affairs (the numbers are fake). You recorded the numbers of publications per year for each department, as the following table shows.

Table 1. Number of Publications in Two Departments

	Econ	Public Affairs
Max	20	24
Min	12	10
Mean	16	12
Standard Error	5	2
Variance	20	40
Sample Size (N)	9	14

a. Set up a two-tailed hypothesis test for this analysis.

b. Calculate the 95% confidence interval for each department in terms of the average number of publications per year.

c. How will you make the conclusion about the hypothesis testing based on the 95% confidence interval you calculated in part b?

d. Based on the 95% confidence interval you calculated in part b, is it possible that p-value is higher than 0.05?