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ECO251 QBA1
FIRST HOUR EXAM
October 6, 2004

Name: _____
Student Number : _____
Class Hour: _____

Remember – Neatness, or at least legibility, counts. In most non-multiple-choice questions an answer needs a calculation or short explanation to count.

Part I. (7 points)

Use the eleven numbers that you used in the second problem in the take-home exam. (If you don't have them – take your student number plus the numbers (3, 6, 9, 9, 21) . Example: Seymour Butz's student number is 876509, so he gets 8, 7, 6, 5, 0, 9, 3, 6, 9, 9, 21. Of course, he has read "Things That You Should Never Do on an Exam or Anywhere Else" and knows that he can't use them this way.)

Compute the following:

a) The Median (1)
b) The Standard Deviation (3)
c) The 2nd Quintile (2)
d) The Coefficient of variation (1)

Part II.

1. The problem in the textbook that gives the data used in the take home also gives the braking distance for a sample of domestic made cars. It is presented below.

Distance(feet)	frequency
210 - 220	1
220 - 230	1
230 – 240	1
240 – 250	1
250 – 260	4
260 - 270	3
270 - 280	6
280 - 290	4
290 - 300	2
300 – 310	2
310 - 320	0

Minitab was used to calculate statistics from these data. It claims the following: $\bar{x} = 269$, $s^2 = 525$, $k_3 = -7281.61$. You will not be able to use any of these numbers in b) or c) without some manipulation in parts b and c. Answers below are not acceptable unless you give some evidence in the sample statistics.

a) Do American cars have a shorter braking distance? Compare all 3 measures of central tendency. (2)
b) Are American cars more consistent in braking distance than foreign cars? Use a dimension-free measurement of variability. (2)
c) Compare the direction and degree of skewness in the two distributions. Use <u>one</u> dimension- free measure of skewness. (2)
d) Write a 5-number summary of the results from the first take-home problem. (2) 15

2. The following numbers refer to miles-per-gallon of a sample of vehicles (Bowerman and O'Connell). This has been corrected.

	Class (mpg)	f	f_{rel}	F	F_{rel}	
	29.8 - 30.3	____	____	____	.0612	
	30.4 – 30.9	____	____	____	.2449	
	31.0 – 31.5	____	____	24	____	
	31.6 – 32.1	____	.2653	35	.7551	
	32.2 – 32.7	9	.1837	46	.9388	
	32.8 – 33.3	3	.0612	49	1.000	

Fill in the missing numbers. (5) 20

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Part III. (At least 22 points – 2 points each unless marked)

1. Mark the variables below as qualitative (A) or quantitative (B)
   a) Number of days a patient stays at a spa
   b) Preferences for 10 beers on a 1st to 10th scale
   c) Method of contraception
   d) Per cent change in population between censuses

2. Which of the following is an example of continuous ratio data?
   a) Number of days a patient stays at a spa
   b) Preferences for beers on a 1 to 10 scale
   c) Method of contraception
   d) Per cent change in population between censuses
   e) None of the above. 4

3. A summary measure that is computed to describe a characteristic of a population is called
   a) a parameter.
   b) a census.
   c) a statistic.
   d) An inference
   e) None of the above 6

4. In general what are the two types of descriptive statistic most frequently reported
   a) Measures of kurtosis and measures of dispersion
   b) Measures of kurtosis and measures of skewness
   c) Measures of kurtosis and measures of central tendency
   d) Measures of dispersion and measures of skewness
   e) Measures of dispersion and measures of central tendency
   f) Measures of skewness and measures of central tendency
   g) None of the above. 8