

**Econ 227 Statistics for Economists
Practice Exam**

Your Name _____

1)

The Australian Bureau of Meteorology collects data on rainfall across Australia. Given below is the mean monthly rainfall in Broken Hill as well as the median monthly rainfall.

Average Monthly Rainfall in Broken Hill (in millimeters) 1900 to 1990		
Month	Mean	Median
Jan	23	9
Feb	24	10
Mar	18	9
Apr	19	9
May	22	13
Jun	22	15
Jul	17	15
Aug	19	17
Sep	20	12
Oct	25	15
Nov	19	10
Dec	20	7

a. Note that the median monthly rainfall in January is much smaller than the mean monthly rainfall. What does this imply about the shape of the distribution of the rainfall data for the month of January?

b. Which measure of central tendency, the mean or the median, is more appropriate for describing rainfall in Broken Hill? Justify your answer using knowledge of mean and median.

c. In the north of Australia, the wet season occurs from November to April. Broken Hill, in central Australia, is occasionally drenched by a northern storm during these months. These storms tend to drop a large amount of rain in a comparatively short time. How does the table reflect this fact?

2)

Suppose the scores on a Statistics exam have mean of 77, and standard deviation of 8. After grading the exam, suppose Prof Pete realizes that one of the questions was worded poorly, so it is decided that 4 points will be added to everyone's score. What will be the mean and standard deviation of the corrected scores?

3)

Be sure you are able to discuss (short paragraph) two of the following economic statistics:

GDP

Index of Leading Indicators

Unemployment Rate

Consumer Price Index

Money Supply

Dow Jones Industrial Average

Foreign Exchange

4)

Given the following numbers for the Index of Leading Indicators? (Current number here)

- a. **What does this mean?**
- b. **Give a short forecast of the GDP for the next 6 months (your own).**

5)

For each of the following studies, identify the type of graph (1 histogram, scatter diagram, or time series graph) that would be MOST appropriate.

- a. **Do countries with lots of smokers have lots of lung-cancer deaths?**
- b. **Does the time between eruptions of Old Faithful depend on the duration of the preceding eruption?**
- c. **Have temperatures in Los Angeles gone up or down over the past 100 years?**
- d. **Could the states that Al Gore won and lost in 2000 have been predicted from how well Bill Clinton did in each state in 1996?**

6)

Usually, we can never observe the error term, but we can get around this difficulty if we assume values for the true coefficients. Calculate values of the error term and the residual for

each of the following observations given that the true β_0 equals 0.0, the true β_1 equals 1.5, and the estimated regression equation is

$$\hat{Y}_i = 0.48 + 1.32X_i$$

$$X_1 = 8, \quad X_2 = 6, \quad Y_1 = 5, \quad Y_2 = 4$$