

**MATH 23 STATISTICS AND PROBABILITY FIRST TEST. FALL 2011**

1. Explain with your words the meaning of the following terms: variable, a statistic, a parameter, a sample data, an outlier, a frequency table and a time series.
2. Consider the following data representing the number of students signed up for the Study Abroad Program each quarter:

58	26	20	29	33	47	42	38	44	56
52	64	68	59	63	36	34	45	51	50

- (a) Determine the class width for five classes.
  - (b) Construct a frequency table, showing the class limits and class boundaries for the five classes
  - (c) Construct the bar-graph or histogram.
3. A survey on professors gave the following average allocation of professional time: teaching, 55%; research, 23%; professional growth, 5%; service to the college 11% and other, 6%. Make a pie (circle) chart showing the allocation of professional time for professors.
  4. Find the mean, mode, the first and third quartiles, median, the range and standard deviation for the following sets of sample data. Explain which of the two samples is more consistent with the mean.
    - (a) 7, 8, 8, 9, 9, 11, 12, 13, 15
    - (b) 5, 7, 7, 8, 9, 12, 12, 16, 16
  5. Explain with your words the meaning of the Tchebychev Theorem. The mean of the scores in a Statistics exam is 87.5 with standard deviation 3.2. Use Tchebychev Theorem to find an interval that contains at least 75% of the data. Use Tchebychev Theorem to find an interval that contains at least 88.9% of the data.
  6. Given the set of data:

1	26	20	25	24	33	26	27	28	35
32	37	36	34	33	31	33	29	21	65

- (a) Find and compare the mean to the 5%-trimmed mean. Identified the outliers.