

Math 150/150H Fall 2011

Review for Test 4

1. For the following data, (a) write a frequency distribution; (b) draw a histogram; (c) draw a stem-and-leaf plot; and (d) find the mean.

The number of units carried in one semester by the students in a business mathematics class was as follows (use intervals of 9-10, 11-12, 13-14, and 15-16):

10 9 16 12 13 15 13 16 15 11 13
12 12 15 12 14 10 12 14 15 15 13

2. The following table gives the frequency counts for 44 first-year college students' caloric intake on a random day:

Interval	Frequency
0-999	1
1000-1999	12
2000-2999	14
3000-3999	11
4000-4999	5
5000-5999	1

Find the mean, the modal class, and the standard deviation.

3. Find the median and mode(s) for the following data set:

Ages (years) of senior citizens tested for low calcium levels:

78, 72, 72, 73, 73, 73, 65, 68, 89, 84, 71, 80

4. Find the range and standard deviation for the following distribution:

Number of days in a month of sunshine for a village:

14, 17, 18, 19, 30

5. Find the given areas under the standard normal curve.

(a) Between $z = 0$ and $z = 1.35$

(b) Between $z = -1.88$ and $z = 2.41$

6. The annual stock returns (percent) of Target Corporation are given in the following table:

Year	2005	2006	2007	2008
Return	6.6	4.7	-11.7	-30.4

Find the mean and standard deviation of the return for the four-year period.

7. The weight gains of two groups of 10 rats fed on two different experimental diets were as follows:

Diet A	1	0	3	7	1	1	5	4	1	4
Diet B	2	1	1	2	3	2	1	0	1	0

Compute the mean and standard deviation for each group, and compare them to answer the following questions:

- (a) Which diet produced the greatest mean gain?
- (b) Which diet produced the most consistent gain?

8. The table gives the frequency distribution for the 161 movies that earned \$75 million or more dollars in gross domestic receipts from 2004-2008:

Interval (in Millions of Dollars)	Frequency
75-149.999999	102
150 - 224.999999	34
225 - 299.999999	13
300 - 374.999999	8
375 - 449.999999	3
450 - 524.999999	0
525 - 599.999999	1

Calculate the mean and the standard deviation for the data.

9. The table gives the number of vehicles (in thousands) sold within the United States in March 2008 and March 2009 for 12 auto manufacturers:

Auto Manufacturer	March 2008 Sales	March 2009 Sales
General Motors Corp.	115	68
Ford Motor Corporation	73	46
Chrysler LLC	47	24
Toyota Motor Sales USA, Inc.	130	81
American Honda Motor Co., Inc.	82	55
Nissan North America, Inc.	66	43
Hyundai Motor America	31	32
Mazda Motors of America, Inc.	22	15
Mitsubishi Motors NA, Inc.	8	3
Kia Motors America, Inc.	14	12
Volkswagen of America, Inc.	19	13
Audi of America, Inc.	7	5

- (a) Find the mean and standard deviation for each set of sales.
- (b) Which company is closest to the mean sales in March 2008? in March 2009?
- (c) Find the five-number summary for each set of sales.
- (d) Construct boxplots for the two data sets on the same scale.
- (e) Does it appear that sales increased or decreased? Explain.

10. On standard IQ tests, the mean is 100, with a standard deviation of 15. The results are very close to fitting a normal curve. Suppose an IQ test is given to a very large group of people. Find the percentage of people whose IQ score is

- (a) more than 130;
- (b) less than 85;
- (c) between 85 and 115.