University of California, Los Angeles
Department of Statistics

Statistics 13 **Instructor: Nicolas Christou**

Homework 1

EXERCISE 1
Researchers measure the *pH* (a scale on which a value of 7 is neutral and values below 7 are acidic) of water collected from rain and snow over a 6-month period at a certain area in California:

3.13, 3.84, 3.26, 3.58, 4.34, 4.58, 4.44, 4.85, 4.78, 4.13, 4.94, 4.99, 4.64, 4.31, 4.39
4.45, 4.52, 4.26, 4.40, 5.78, 4.73, 4.56, 5.08, 5.51, 5.80, 5.70, 5.96, 5.50, 5.22, 5.31

Construct a histogram of the above values and write a comment.

EXERCISE 2 From *Intro Stats*, De Veaux, Velleman, First Edition.
In 1995 the Council of Europe published a report entitled *The European School Survey Project on Alcohol and Other Drugs*. Among other issues, the survey investigated the percentages of 9th graders who had used marijuana. The results for 20 European countries are shown below:

Counry	Percentage	Counry	Percentage
Austria	10	Italy	19
Belgium	19	Luxembourg	6
Denmark	17	Netherlands	31
England	40	N. Ireland	23
Finland	5	Norway	6
France	12	Portugal	7
Germany	21	Scotland	53
Greece	2	Spain	15
Iceland	10	Sweden	6
Ireland	37	Switzerland	27

Construct a histogram of the above values and write a comment.

EXERCISE 3 From *Statistics for the Life Sciences*, Myra L. Samuels, Jeffrey A. Witmer, Third Edition.
For each of 31 healthy dogs, a veterinarian measured the glucose concentration in the anterior chamber of the right eye, and also in the blood serum. The following data are the anterior chamber glucose measurements, expressed as a percentage of the blood glucose:

81 85 93 93 99 76 75 84 78 84 81 82 89 81 96 82
74 70 84 86 80 70 131 75 88 102 115 89 82 79 106

Construct the frequency distribution and display it as a table and as a histogram.

EXERCISE 4
Generate 3 different samples (30 observations in each sample). Use any numbers you want so that the resulting histogram of

a. the first sample is approximately symmetrical.

b. the second sample is skewed to the right.

c. the third sample is skewed to the left.

Can you think of one real data example for each one of the above cases?