

Math 130: Introductory Statistics

Quiz 1: Frequency distributions, histograms, and measures of center

Suppose a researcher is interested in how well a diet pill works in combination with regular exercise. To answer this question he takes 20 people, gives half of them the diet pill (the treatment group), and the other half of them a placebo (the control group). The individuals in the study do not know if they received the placebo or the diet pill. They all exercise for 1 month and their weight losses are given below.

Control Group	Treatment group
2	6
9	3
5	3
3	12
8	10
12	8
4	18
9	7
11	6
10	16
$\sum_{i=1}^{10} x_i = 73$	$\sum_{i=1}^{10} x_i = 89$

1. Use a class width of 4, and a first lower class limit of 0, and construct a frequency distribution for the control group.
2. Use a class width of 4, and a first lower class limit of 0, and construct a frequency distribution for the treatment group.
3. Construct a relative frequency distribution for the control group.
4. Draw a histogram for the control group.
5. Draw a histogram for the treatment group.
6. From the histograms, does it look like the diet pill is effective?
7. What is the mean, median, and mode of the control group?
8. What is the mean, median, and mode of the treatment group?