

Math 21 – Summer – Week 1 Written Project (Chapters 3 & 4) Part 1 – Chapter 3

A math instructor wrote two versions of the same test and believed them to be of equal difficulty. The first version was given to a random sample of 36 students, and the second version was given to a random sample of 41 students. Your job is to help the instructor decide if the two tests were of equal difficulty, or if one of the exams was harder than the other. Here are the scores of the two versions.

Version A

91	79	82	86	88	88	82	88
88	64	98	90	75	60	93	80
86	82	63	77	82	69	79	73
57	92	82	85	94	77	74	90
53	68	62	77				

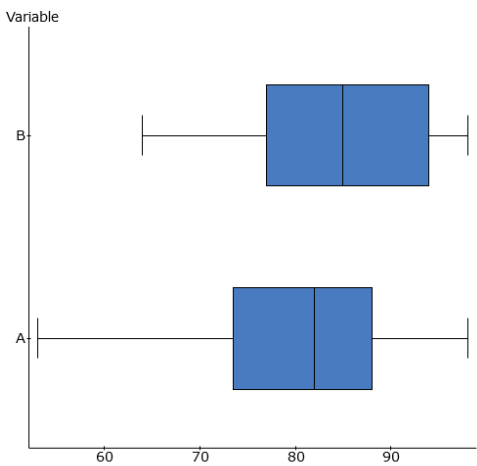
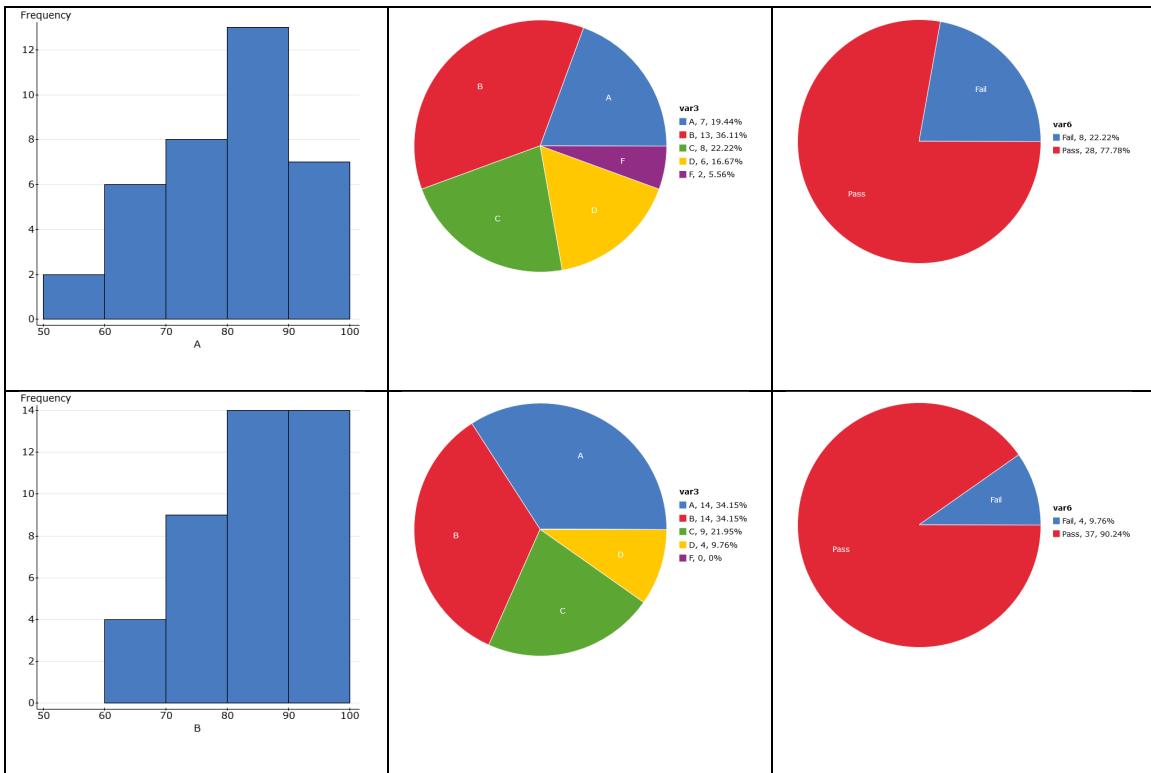
Version B

69	84	79	94	85	96	94	79
71	94	70	86	82	91	64	86
87	87	92	69	74	95	77	95
94	80	69	98	96	87	76	91
82	89	76	95	95	72	82	82
85							

- Compute the following statistics for each test: mean, median, standard deviation.
- Create a histogram for each set of test scores.
- Create a pie chart showing the letter grade breakdown for each test. (You will need to manually count how many A's, B's, ... and to a pie chart with summary.)
- Create a pie chart showing the pass/fail breakdown for each test. (You will need to manually count how many students passed and failed, then do a pie chart w/summary.)
- Find the 5-number summary for each set of scores.
- Draw a box plot for each set of scores.

Use your results to support a paragraph that answers the question "Were the two exams of equal difficulty?"

Column	Mean	Median	Std. dev.	Column	Min	Q1	Median	Q3	Max
A	79.277778	82	11.262101	A	53	73.5	82	88	98
B	84.121951	85	9.399987	B	64	77	85	94	98



Answers will vary about whether the exams were of equal difficulty. The boxplot, pie charts, and measures of central tendency all point to the scores on exam B being higher.

(We will learn in Chapter 11 that the mean score for all students on exam B is higher than the mean score for all students on exam A.)