

MTH/SLS 218-6816 Quiz on Chapter 14

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Professor Ilya Kofman

NAME: Key

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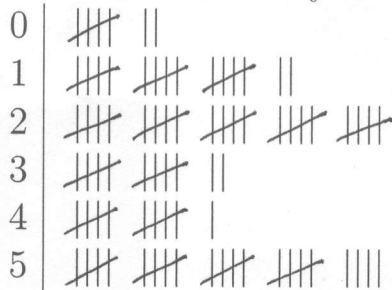
Problem 1. The following statistics provide information about a national history exam, taken by 10,000 students:

Mean 540, Median 475, Mode 468
 25th Percentile 260, 75th Percentile 693, 90th Percentile 874

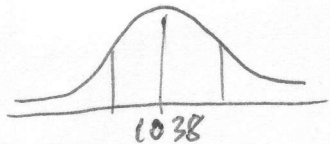
- 3 (a) 5,000 students scored at or above 475
- 3 (b) 1,000 students scored at or above 874
- 3 (c) The most common score was 468
- 3 (d) The number of students who scored 260 or better was 7500
- 3 (e) The number of students who scored 260-693 was 5000
- 4 (f) Was the top half or the bottom half of scores more spread out? Why?
Mean > Median

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Problem 2. The following is a survey of students who were asked how many times they check their email daily:



- 3 (a) The median for this survey is 2
- 3 (b) The mean for this survey is 2.78
- 3 (c) Students in the 75th percentile gave what answer(s)? 5
- 3 (d) Students who check email once daily are in what percentile? 25th
- 3 (e) How many daily email checks would you expect by 1,000 students? 2780
 (Use one of your previous answers.)



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Problem 3. Scores on a recent SAT were roughly normal, with mean 1038 points, and standard deviation 224 points.

- 4 (a) What was the range of the middle 95% of SAT scores?

$$590 - \text{~~1038~~} 1486$$

- 4 (b) How high must a student score to be in the top 16% of SAT scores?

$$1262$$

- 4 (c) What percentage of students scored at or above 814?

$$84\%$$

- 4 (d) **Bonus:** An older SAT had mean 1062 and standard deviation 216 points. If Jack scored 1170 on the recent SAT, and Jill scored 1180 on the older SAT, who scored better? Show work.

$$\text{Jack's } z\text{-score} = \frac{1170 - 1038}{224} = 0.59$$

$$\text{Jill's } z\text{-score} = \frac{1180 - 1062}{216} = 0.55$$

Jack scored better.