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AP Statistics – Ms. Klimczuk

**Z-Scores**

1. A set of mathematics exam scores has a mean of 70 and a standard deviation of 8. A set of English exam scores has a mean of 74 and a standard deviation of 16. For which exam would a score of 78 have a higher standing?
2. For a distribution of raw scores with a mean of 45, the Z-score for a raw score of 55 is calculated to be -2.00. Regardless of the value of the standard deviation, why must this Z-score be incorrect?
3. A distribution of scores has a standard deviation of 10. Find the z-scores corresponding to the following values:
4. A score that is 20 points below the mean
5. A score that is 10 points below the mean
6. A score that is 15 points above the mean
7. A score that is 30 points below the mean
8. In a population of scores a raw score with the value of 83 corresponds to a Z of +1.00 and a raw score of 86 corresponds to a Z of +2.00.  What is the mean and standard deviation of this population?
9. On a statistics exam, you have a score of 73. If the mean of the exam is 65 would you prefer the standard deviation of the scores to be 8 or 16? Why?
10. Your Statistics teacher has announced that the lower of your two tests will be dropped. You got a 90 on test 1 and an 80 on test 2. You are all set to drop the 80 until she announces that she grades “on a curve.” She standardizes the scores in order to decide which the lower one is. The mean on the first test was 88 with a standard deviation of 4 and the mean on the second test was 75 with a standard deviation of 5.
11. Which one will be dropped?
12. Does this seem “fair”?