**Statistics Review Chapter 14**

**Below is a random sample of the final 50 grades from a teacher’s classes over the last decade.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 73 | 84 | 67 | 75 | 74 | 90 | 60 | 68 | 70 | 99 |
| 73 | 84 | 82 | 72 | 87 | 94 | 75 | 58 | 86 | 79 |
| 82 | 65 | 91 | 90 | 73 | 72 | 79 | 38 | 65 | 76 |
| 69 | 73 | 59 | 94 | 85 | 88 | 78 | 75 | 92 | 87 |
| 77 | 94 | 75 | 68 | 69 | 76 | 84 | 68 | 76 | 98 |

1. Make a stem & leaf plot for the grades.
2. Make a frequency distribution chart with class ranges of 30-39, 40-49, 50-59, etc.
3. Make a histogram using your information in #3. **Title and axis labels!!**
4. Find the 5 number summary.
5. Make a box & whisker plot for the grades. Make sure to use a title.
6. Find the standard deviation. You can use your calculator.
7. Using your mean and standard deviation, what is the z-score for a grade of 88?
8. What is the z-score for a grade of 59?
9. 68% of the grades fall between scores of \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_.
10. If you want to fall in the 95th percentile, what grade would you need to have in the class?

For #11-16, determine the z-score for the given value in a normal distribution with a mean of 60 and a standard deviation of 5.

1. 63 12. 57 13. 59 14. 72

15. 60 16. 51

17. Ms. Jones had the whole class retake a test. The scores on both tests were in the normal distribution. On the first test, the class average was an 80% with a standard deviation of 10. On the retest, the class average was a 95% with a standard deviation of 5. On the first test you received a 93% and on the retest you received a 98%. **Relative to the rest of the class-on which test did you perform better??** SHOW YOUR WORK.

18. Describe the types of bias that might exist when collecting data.

19. What is the difference between a histogram and a bar graph?

20. What is the difference between a sample and a population?