Key

Foundations of Math 3 Unit 1 Review Sheet

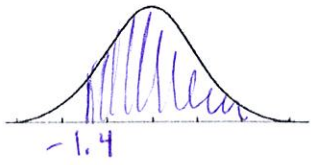
1. What is the mean and how do you find it? average value/balance point
   add up values & ÷ n
2. What is the median and how do you find it? middle value
   put #s in order & find middle
3. What is the mode? value that occurs the most
4. Which measure of center should you use if there is an outlier? median
5. Which measure of center should you use if there is not an outlier? mean
6. What are the 5 parts of the 5 number summary? Min, Q1, Med, Q3, Max
7. What type of plot can we draw using the 5 number summary? box & whisker
8. If 2 sets of data have the same mean, what do we use to determine which is more consistent?
   standard deviation (smallest)
9. What are the steps to find standard deviation on the calculator? stat, enter, type #s in L1
   stat, calc, 1-var stats
10. Give an example of a set of data with a standard deviation of 0. 5, 5, 5, 5, 5
11. In a normal distribution, what percent of the data lies within 1 standard deviation of the mean?
    68%
12. In a normal distribution, what percent of the data lies within 2 standard deviations of the mean?
    95%
13. In a normal distribution, what percent of the data lies within 3 standard deviations of the mean?
    99.7%
14. Kevin earned a grade of 52 on a normally distributed test with mean 45 and standard deviation 10. On another normally distributed test with mean 70 and standard deviation 15, he earned a 80. On which of the two tests did he do better, relative to the others who took the tests? Explain your reasoning.
    the first test, higher z score

$\frac{52-45}{10} = .7$ $\frac{80-70}{15} = .66$

(#15-19) The IQ scores on an intelligence test are approximately normally distributed with a mean of 105 and standard deviation of 16. What % of people have an IQ:

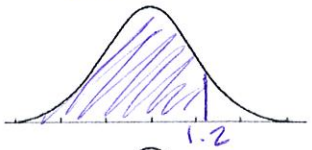
15. greater than 82? 91.92% $z = \frac{82-105}{16} = -1.4$

1 − .0808



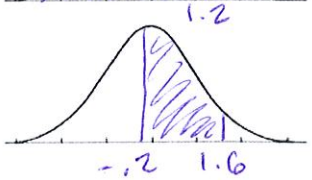
16. less than 124? 88.49% $z = \frac{124-105}{16} = 1.2$

.8849



17. between 102 and 130? 52.45%

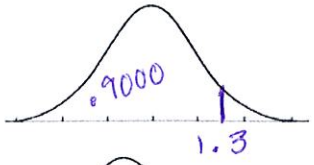
$z = \frac{102-105}{16} = -.2$ $z = \frac{130-105}{16} = 1.6$



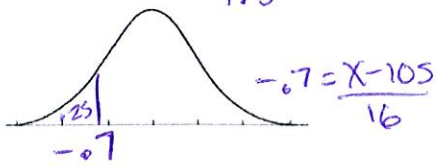
.9452 − .4207 = .5245

18. What IQ score would be at the 90th percentile? 125.8

$1.3 = \frac{x-105}{16}$



19. What IQ score would be at the 25th percentile? 93.8



(#20-25) Identify the sampling method: *simple random, cluster, stratified, convenience, voluntary response, or systematic.*

20. A market researcher randomly selects 200 drivers under 35 years of age and 100 drivers over 35 years of age. stratified

21. All of the teachers from 85 randomly selected nation's middle schools were interviewed. cluster

22. To avoid working late, the quality control manager inspects the last 10 items produced that day. convenience

23. The names of 70 contestants are written on 70 cards, The cards are placed in a bag, and three names are picked from the bag. simple random

24. To ensure customer satisfaction, every 35th phone call received by customer service will be monitored. systematic

25. Based on 12,500 responses from 42,000 surveys sent to its alumni, a major university estimated that the annual salary of its alumni was 92,500. voluntary response

26. Describe the difference between an observational study and an experiment.

in an experiment, some sort of treatment is given before the data is collected

observational study – no attempt is made to affect the outcome