

Chapter 11 Practice Test

1. Which of the following is an example of a quantitative variable?

- A. Names of cats that weigh less than 10 lbs
- B. The weight of the cats seen by a vet last Friday
- C. Type of vaccines given by a vet in one day
- D. The names of the vets working today

2. Mrs. Brown is doing a project for her Master's program. She arranged all of her students by grade level and then picked 20 students from each grade and gave them a project rather than the normal test.

- A. What type of sampling method did she use?
- B. What would the sample be?
- C. What would the population be?

3. The average SAT score 2018 was 1210. Is this a parameter or statistic?

4. Given the data find skew and what measure of center you would use to describe the spread

{88, 95, 92, 60, 86, 78, 95, 98, 92, 96, 70, 80, 96, 89}

5. For the three examples below state which sampling method is being used and if there is bias

- A. The bakery puts a comment box by their door for customer feedback
- B. Mr. Trimble separates students into the bleachers in the gym and used the entire sophomore bleachers as his sample group
- C. Jenna goes to every fifth house to sell candy bars

6. Given the data find skew and what measure of center you would use to describe the spread

{3, 4, 6, 7, 8, 8, 9, 10, 10, 11, 11, 12, 13, 14, 15, 17}

7. A set of barbell prices are normally distributed with a mean of \$76 and a standard deviation of \$10. What's the probability of the prices being between \$65.00 and \$89.00?

8. If a data point is at the 87th percentile, what's the z-score?
9. Sarah was in the 86th percentile for her chapter 7 test. The class average was 84 with a standard deviation of 2.1, what was Sarah's score?
10. Find the margin of error given the standard deviation is 21 and the sample number is 150.
11. The average weight of dogs in Sammamish is 36 lbs with a standard deviation of 5.3. After weighing his 30 friends' dogs, John says that his dog weighs way more than other dogs in Sammamish. His dog weighs 41 lbs. Is he correct? Show work with margin of error!
12. A student takes the SAT math test, which has a mean of 510 and a standard deviation of 72. Draw a normal curve and label the mean and three standard deviations on each side of the mean.
13. The lifespans of seals in a zoo are normally distributed with a $\mu = 13.8$ year and $\sigma = 3.2$ years. Use the empirical rule to estimate the probability of a seal living between 7.4 & 17 years.
14. A set of physics exam scores are normally distributed with $\bar{x} = 82$ and $\sigma = 7$. Irina got a score of 95 on the exam, what is her percentile?
15. A set of middle school student heights are normally distributed with mean 150cm and standard deviation 20cm. Uma has a height of 172cm. What is the probability a student is taller than 172cm?
16. The lifespans of cows are normally distributed with a $\mu = 20.5$ and $\sigma = 3.9$. Use the empirical rule to find the probability of a cow living longer than 24.4 years.
17. Jessica's z-score on the mile run was -1.23. The mean run time of the class was 7 minutes and the standard deviation was 1.1 minutes. What was Jessica's run time?
18. The weights of all the children born on February 27th were recorded. The average was 10.3oz with a standard deviation of 1.6oz. The top 2.5% of the babies weigh how much? Use the empirical rule.
19. Every year runners compete in the Peachtree Road Race. The run 10 miles in 75 minutes on average with a standard deviation of 5 minutes. Fred ran the race in 82 minutes, Frank was in the 45th percentile, George had a z-score of -1.4 and Carl had a z-score of 0.9. Rank all of the runners from fastest to slowest.