

1. (2 points) Determine whether the given value is a statistic or a parameter. The 22-Hour Fitness Club surveys 40 randomly selected members and found that the average weight of those questioned is 157 lb.

1. _____

2. (2 points) A medical researcher measures the decrease in blood pressure of heart patients from a pharmaceutical treatment. What kind of variable is the researcher studying?

2. _____

3. (2 points) Sketch a histogram below for which the median would be less than the mean.

3. _____

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4. (3 points) List the original data from the stemplot in an ordered list sorted in a descending fashion.

Stem	Leaves
2	1 7
3	1 1 3 5
4	1 3 3 7 9
5	3 4

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5. (3 points) **Construct the dotplot for the given data.** Attendance records for a preschool class with 15 students show the number of days each student was absent during the year. The days absent for each student were as follows.

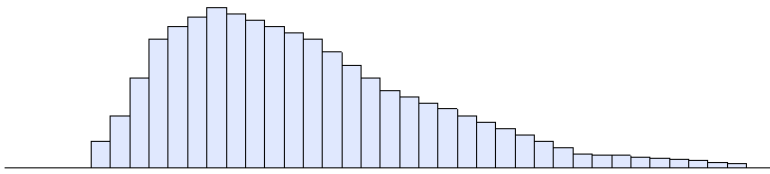
0 2 3 4 2 3 4 6 7 2 3 4 6 9 8

6. (3 points) *Use the data to create a stemplot.* The midterm test scores for the university's seventh-period graduate chemistry class are listed below.

85 77 93 91 74 65 68 97 88 59 74 83 85 72 63 79

Use the data from question 6 to answer questions 7—13.

7. (1 point) What is the range? 7. _____
8. (1 point) What is the value of the median? 8. _____
9. (1 point) What is the value of quartile 1? 9. _____
10. (1 point) What is the value of quartile 3? 10. _____
11. (1 point) What value provides the lower fence for the data? 11. _____
12. (1 point) What value provides the upper fence for the data? 12. _____
13. (1 point) Are there any outliers? Explain your reasoning to obtain full credit.



14. (1 point) Is the distribution in the histogram above skewed left, skewed right, or is normal?

14. _____

15. (2 points) Andrew asked five of his friends how many cousins they had. The results are listed below. Find the mean number of cousins. Your answer should include writing down which formula you are using.

7 14 4 3 8

15. _____

16. (1 point) What formula should be used to calculate the standard deviation?

16. _____

17. (2 points) What is the value of the standard deviation?

17. _____

A survey of autos parked in student and staff lots at the college classified the brands by country of origin. The results from the survey are given in the table (right). Use these results to answer questions 17 – 19.

		Driver	
		Student	Staff
Origin	American	107	105
	European	33	12
	Asian	55	47

18. (2 points) What percent of all the cars surveyed were foreign?

18. _____

19. (2 points) What percent of European cars were owned by staff?

19. _____

20. (2 points) What percent of the staff owned foreign cars?

20. _____

21. (2 points) The annual snowfall in a town has a mean of 40 inches and a standard deviation of 11 inches. Last year there were 65 inches of snow. How many standard deviations from the mean is that?

21. _____

22. Environmental Protection Agency fuel economy estimates for automobile models tested recently predicted a mean of 24.8 mpg and a standard deviation of 6.2 mpg for highway driving. Assume that a Normal Model can be applied.

- (a) (3 points) Draw the model for auto fuel economy. Clearly label it, showing what the 68–95–99.7 Rule predicts about miles per gallon.

- (b) (2 points) In what interval would you expect the central 68% of autos to be found?

(b) _____

- (c) (2 points) About what percent of autos should get more than 31 mpg?

(c) _____

- (d) (2 points) About what percent of autos should get between 31 and 37.2 mpg?

(d) _____

23. What percent of a Standard Normal model is found in each region?

- (a) (2 points) $z > -2.05$

(a) _____

- (b) (2 points) $z < 2.25$

(b) _____

- (c) (2 points) $z > -2.05$

(c) _____

- (d) (2 points) $1.2 < z < 1.8$

(d) _____

24. In a Standard Normal model, what value(s) of z cut(s) off the region described? Use a picture.

(a) (2 points) The lowest 17% (a) _____

(b) (2 points) The highest 20% (b) _____

(c) (2 points) The highest 10% (c) _____

(d) (2 points) The middle 40% (d) _____

25. Assume the cholesterol levels of adult American women can be described by a Normal model with a mean of 188 mg/dL and a standard deviation of 24 mg/dL.

(a) (2 points) What percent of adult women do you expect to have cholesterol levels over 200 mg/dL?

(a) _____

(b) (2 points) What percent of adult women do you expect to have cholesterol levels between 150 and 170 mg/dL?

(b) _____

(c) (2 points) Above what value are the highest 15% of woman's cholesterol levels?

(c) _____

26. (3 points) An incoming freshman took her college's placement exams in Spanish and Mathematics. In Spanish she scored 83 and in math 87. The overall results on the Spanish exam had a mean of 72 and a standard deviation of 8; while the mean math score was 68, with a standard deviation of 12. On which exam did she do better compared with other freshman?

26. _____

27. (4 points) What happens to the mean and standard deviation of a data set when you (note: you need four answers here):
- (a) Add the same constant to every data value
 - (b) Subtract the same constant to every data value
 - (c) Multiply the same constant to every data value
 - (d) Divide the same constant to every data value