

STAT 301 REVIEW FOR EXAM 1 - ANSWERS:

1.
 - a. C
 - b. A
 - c. B

2.
 - a.
$$\begin{array}{l} 2 \mid 5 \ 7 \ 8 \ 8 \ 8 \ 9 \ 9 \ 9 \\ 3 \mid 0 \ 1 \ 2 \ 4 \ 6 \ 9 \\ 4 \mid 2 \ 5 \\ 5 \mid 2 \end{array}$$
 - b. Skewed right and unimodal
 - c. 25, 28, 30, 37.5, 52
 - d. Yes, 52 is an outlier.
 - e. modified boxplot
 - f. Median and IQR since they are resistant to outliers and work best with skewed distributions.

3.
 - a. sports cars
 - b. small cars

4.
 - a.
$$\begin{array}{l} 1 \mid 0 \ 2 \\ 1 \mid 7 \ 9 \ 9 \\ 2 \mid 0 \ 1 \ 2 \ 4 \\ 2 \mid 5 \ 6 \ 6 \\ 3 \mid 0 \ 4 \end{array}$$
 - b. Symmetric
 - c. $M = 21.5$, $IQR = 7$

5.
 - a. A sophomore from Harrison High School.
 - b. All 800 sophomores at Harrison High School.
 - c. The 150 selected sophomores from Harrison High School.
 - d. GPA (numeric), whether the student took the SAT as a sophomore (categorical).
 - e. SRS

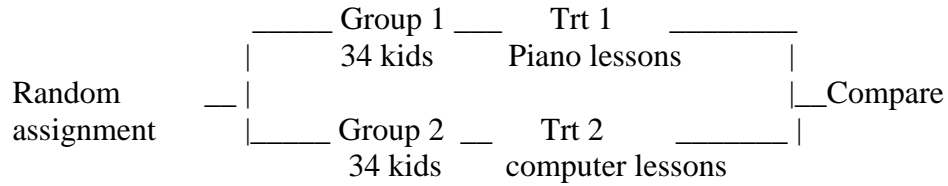
6. No, you do not know the severity/types of the surgeries performed at each hospital.

7. c

8. e

9.
 - a. All preschool children
 - b. The 68 preschool children
 - c. The amount of improvement (Integers ranging from -4 to 9)
 - d. Experiment – a treatment (6 months of piano lessons or 6 months of computer lessons) was imposed on the subjects.

e. Completely randomized design



10. No, the total number of people voting in the elections were greater than in the past. It would be more informative to compare the % of votes won by presidential candidates.

11. a. 1
b. 3

12. c

13. a. (12.1 to 20.5)
b. Almost zero
c. 0.0392
d. 18.988 pounds

14. a. 11.51%
b. 1820 hours
c. 0.9948

15. e

16. Statistical quality control only pays attention to the internal state of the process, whereas capability refers to the ability of the process to meet or exceed the external requirements placed on it.

17. Center line = 29
LCL = 28.53
UCL = 29.47

18. A	25. B	32. E
19. C	26. A	33. B
20. C	27. D	34. E
21. D	28. A	35. C
22. E	29. E	36. F
23. C	30. D	37. B
24. F	31. C	38. B