

AP Statistics

Review Ch. 1

- 1. b            2. c            3. b            4. c            5. a            6. d
- 7. c            8. e            9. d            10. d           11. a           12. d
- 13. a           14. e           15. b           16. b           17. e           18. D
- 19. c           20. e           21. a           22. c

23.a. 5 roller coasters that opened in 2009

b. Categorical: Type, Design

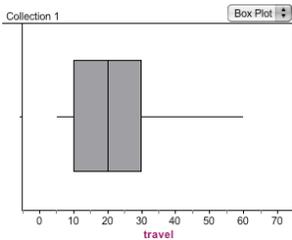
Quantitative: Height (in feet), Speed (in mph), Duration (in seconds)

24a. Both distributions are approximately symmetric. The minimum and lower quartiles are similar for both distributions. The most noticeable difference is in the variability (spread), with prize amounts more variable after the change than before the change. The median prize amount is greater after the change, and there were larger prize amounts after the change.

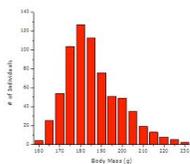
b. Overall, prize amounts tended to be greater after the dollar amounts were doubled. From the boxplot, we can see the median prize amount was greater after the change and the upper quartile after the change is greater than the maximum prize before the change. This means that more than 25% of the prizes won after the change were greater than any prize won before the change.

25. a. 22.47, 20      b. 55, 20      c. -20, 60      d. 15.23

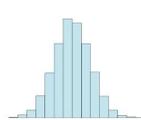
e. 5, 10, 20, 30, 60



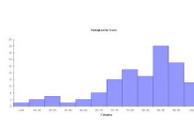
26. a.



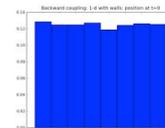
b.



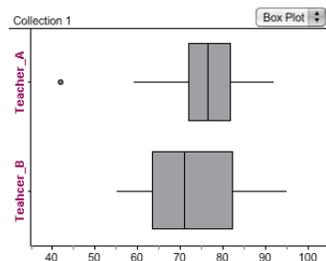
c.



d.



27a.



- b. Yes, there were outliers for Teacher A. The low boundary for outliers was 57, so 42 is an outlier.
- c. While Teacher B has both a higher Q3 and the highest score of 95, this teacher's scores are also more spread out in the top 3 quartiles. However, Teacher A's top three quartiles start above the median of Teacher B. This means 75% of Teacher A's scores are above the value of 71% and only 50% of Teacher B's students are at or above this value. Teacher A appears to have better scores overall. Also, Teacher's A's students in the top 75% are tightly packed so there is also a stronger appearance of consistency in Teacher A's students.

28. (a) 0.581

(b) 72.1%

(c) Based on the mosaic plot, there is an association between water temperature and whether the eggs hatched or not. The python eggs were least likely to hatch in cold water (59.3% hatched) and most likely to hatch in hot water (72.1% hatched), so the chance of hatching increased as the water temperature increased.