

Comparing Distributions

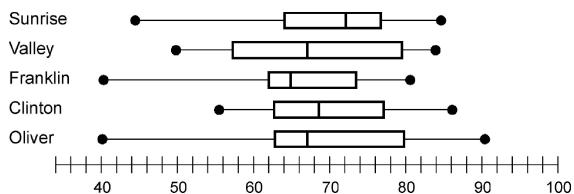
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1. The standard deviation for the golf scores of 25 randomly selected high school students was calculated. Similarly, the standard deviation was computed for the golf scores of 20 professional golfers. Which group would be expected to have the lower standard deviation, and why?
- A. professional golfers, since they will have less widely-spread abilities
 - B. professional golfers, since they have greater experiences than the students
 - C. students, since their golf scores would be lower
 - D. neither; both groups will have about the same standard deviation

2. The reaction times (in seconds) of a group of adult men were found to be:
- 0.47, 0.17, 0.14, 0.28, 0.47, 0.58, 0.99, 0.17, 0.75, 0.58, 0.75, and 0.55.
- Later, after drinking alcohol, the reaction times were re-recorded. The times were:
- 0.26, 0.95, 0.65, 0.79, 0.27, 1.20, 1.51, 0.65, 0.16, 0.26, 0.36, and 0.64.
- What is the mean reaction time, both before the drinks and after?
- A. 0.64 s, 0.49 s
 - B. 0.94 s, 0.46 s
 - C. 0.49 s, 0.64 s
 - D. 0.44 s, 0.96 s

3. The following box-and-whisker plots show the Math Contest Scores of five schools that participate in the same academic league.



Which school has the smallest interquartile range?

- A. Sunrise
 - B. Valley
 - C. Franklin
 - D. Oliver
4. Which school has the largest range?
- A. Valley
 - B. Franklin
 - C. Clinton
 - D. Oliver

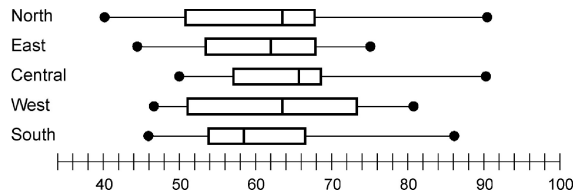
5. The back-to-back stemplot represents the shoe sales for Company A and Company B over a 25-day period.

Company A		Company B
	7	2
9 7 1 1		3
6 5 4	4	0 1 4 6 9
4	5	2 3
7 4 3 2 2 0	6	0 2
5 5 3 3	7	2
	8	6
	9	0 4 9
7	10	3 4
	11	2 4 4 6 7
8 6 5 3 0	12	3 5 9 9

Find the difference between the means of Company A and Company B.

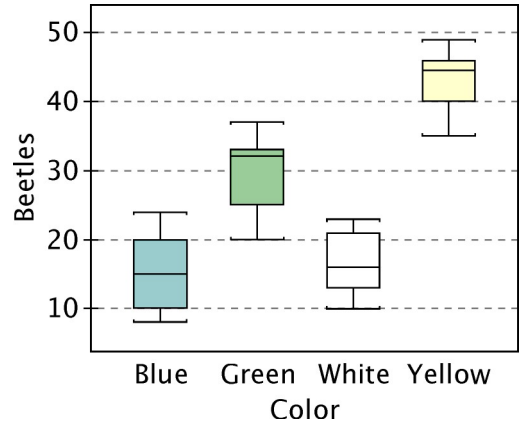
- A. 12 B. 17 C. 45 D. 63

6. The box-and-whisker plots show the scores of five high schools at the district track and field championship.



Which school performed best? Explain.

7. The graph below depicts the number of beetles captured on boards of different colors.



The median for the distribution of beetles captured on white boards is closest to:

- A. 5 B. 10 C. 15 D. 25

8. The interquartile range for the distribution of beetles captured on blue boards is closest to:

- A. 10 B. 15 C. 20 D. 25

9. The following is a list of soccer players' longest continuous time (in mins) spent on the field during a 90 min game.

Player	Time	Player	Time	Player	Time
1	90	6	60	11	60
2	90	7	55	12	13
3	75	8	62	13	8
4	80	9	50	14	15
5	77	10	53	15	10

- a) Draw a histogram using the following distribution of time.
- I. 0–14 mins
 - II. 15–29 mins
 - III. 30–44 mins
 - IV. 45–59 mins
 - V. 60–74 mins
 - VI. 75–90 mins
- b) What are the clusters of data observed from the graph?
- c) What are the gaps of data observed from the graph?
- d) Select the best reason for the gaps and clusters.
- I. The team wants to give everyone equal playing time.
 - II. The team gives its best players the most time on the field.
 - III. The team is missing players.

10. The following back-to-back stem-and-leaf plot shows the cost of men's and women's shoes at a local store.

Cost of Shoes		
Women's		Men's
	6	9 9
7 6 3	7	2 2 3 4 9
6 4 4 4	8	1 3 4 4 6 6 7
9 9 4 3 2 2	9	0 1 2 3 3 5 7
7 4 3 2	10	0 1 1 3 3 3 5 7 7 9
	11	6
8 7 5 3 3 3 3 2 1	12	8
	13	0
	14	
	15	0
	16	
	17	
3 14 represents 143		14 3 represents 143

What is the cost of the least expensive pair of shoes?

- A. \$69 B. \$96 C. \$73 D. \$72

11. Which of the following are true?
- I. Box plots can show data form many different several groups with one variable.
 - II. Dot plots are useful to show clusters of data.
 - III. Box plots are useful to show gaps in the data.
- A. I only B. II only
- C. I and II only D. I, II and III