Comparing Two Data Sets - Independent Practice Worksheet

Complete all the problems.

1. John wants to know if compost improves the growth of plants. So he put compost in the ground floor garden plants and did not put it in the garden on the terrace. Based on the data is there any reason to believe compost improves the growth of plants? Use the standard deviation.

Ground floor garden plant height:

15, 10, 19, 17, 16, 12, 20, 22, 18, 35, 25, 14, 28, 29, 30

Terrace garden plant height:

6, 7, 10, 12, 18, 17, 14, 8, 9, 23, 20, 21, 19, 27, 26

2. The back-to-back stem plot shows the length of phone calls (minutes) by a random sample of Elizabeth and Rachel.

Elizabeth		Rachel
3	1	3 4
2 3 4	2	6 7
6 7	2	8
8 9	3	2 4
3 4	4	1 2
6 7	5	6 7 8

Which of the following statements are true?

I. Elizabeth did not make a 13 minute phone call.
II. Elizabeth's median call length is high when compared to Rachel's median call length.
III. The mean is greater than the median in both groups.
(A) I only (B) II only (C) III only (D) I and II (E) II and III

3. Abigail appointed a gardener a 1-year job for his garden. She wants to know that he is helpful in increasing the number of flowers in the garden. Her friend Pamela has no gardener. Using the data provided, is there any reason to believe that the gardener is helpful to increase the number of flowers.

Abigail's garden's number of flowers:

25, 35, 14, 12, 20, 22, 24, 30, 28, 37, 25, 14

Pamela's garden's number of flowers:

17, 18, 12, 15, 20, 22, 24, 18, 29, 8, 10, 11

4. The back-to-back stem plot shows the number of pieces of paper used over several days by Justin's and Jacob's students.

Justin		Jacob
8	0	7
1 2 3	1	3
8	2	8
2 3 4	3	3 4
9	4	5 6 7
2	5	2 3

Which of the following statements are true?

I. Justin students did not use 8 papers on any day.
II. Justin's mean paper use is high compared to Jacob's mean paper use.
III. The median is greater than the mean in both groups.
(A) I only (B) II only (C) III only (D) I and II (E) II and III

5. Jacob is trying to determine if the help of an after school education TV program helps improve test scores. Class 1 has the help of an after school education TV program. Class 2 does not have an educational TV program. Based on the data is there any reason to believe that Class 1 has an advantage with an education TV program? Hint: Find the median.

Class 1:

40, 80, 95, 88, 78, 77, 84, 70, 65, 55, 68, 50, 60

Class 2:

58, 78, 91, 95, 80, 92, 74, 50, 67, 68, 60, 81, 59

6. The back-to-back stem plot shows the number of water bottles used in a month by a random sample of Jack and Mary's students.

Jack		Mary
3	1	4
2 3 4	2	3 4
6 7	3	8
2 3	4	7 8
8	5	7 8
9	6	6 7

Which of the following statements are true?

I. Jack's students never used 3 water bottles.
II. Mary's median water bottle use is high when compared to Jack's median water bottle use.
III. The mean is less than the median in Mary's case.

(A) I only (B) II only (C) III only (D) I and II (E) II and III (F) I, II, and III

7. William wants to determine if the new car batteries improve the cars speed. He changes battery in all cars. His friend Daniel does not change the car battery in his car. The friends calculate their average lap speed.

Based on the data is there any reason to believe that William's car has advantage with the new battery. Hint: Find the standard deviation.

William's Car (Lap Speed):

100, 120, 140, 125, 150, 155

Daniel's Car (Lap Speed):

80, 100, 127, 137, 151, 140

8. The back-to-back stem plot shows the number of notebooks used in a month by a random sample of class a and class b students. Which of the following statements are true?

Class A		Class B
1	0	
2 3 4	1	2 4
6 8	2	7
8 9	3	7 8
2	4	2 3
4	5	2 3 4

I. Two class A students did not use any book.
II. The class B median is high compared to the class A median.
III. The mean is less than the median in both groups.
(A) I only (B) II only (C) III only (D) I and II (E) II and III

9. Michael trying to determine if regular medical treatment helps to improve a person's life span. People from Shady Groves (home 1) have regular medical treatment. Silky Terrace (home 2) does not have regular medical treatment available. Based on the data is there any reason to believe that home 1 has an advantage with the medical treatment. Hint: find the standard deviation.

Old age home 1:

99, 92, 100, 102, 88, 78, 75, 60, 65, 55

Old age home 2:

71, 68, 81, 55, 80, 93, 99, 69, 98, 100

10. The back-to-back stem plot shows the number of pieces of pizza eaten over a month by a random sample from hotel A and hotel B.

Hotel A		Hotel B
3	0	
2 3 4	1	3 4
6 7	2	7
3 4	3	3 4
6	4	6 7
2	5	2 3 4

Which of the following statements are true?

I. On one night three hotel A guests ate pizza.
II. Hotel A's median is high compared to hotel B's median.
III. The mean is greater than the median in both groups.

(A) I only (B) II only (C) III only (D) I and II (E) II and III