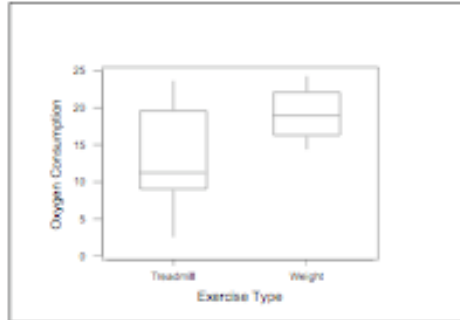


## Assignment #1 Solutions

Mark out of 10, 4 marks for 70, 4 marks for 72, 2 mark2 for 74.  
(Note: future assignments will be longer).

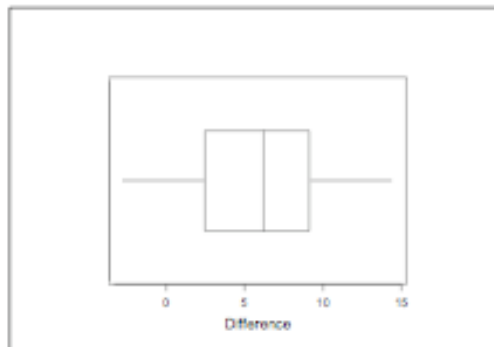
70.

a.



There is a significant difference in the variability of the two samples. The weight training produced much higher oxygen consumption, on average, than the treadmill exercise, with the median consumptions being approximately 20 and 11 liters, respectively.

- b. Subtracting the y from the x for each subject, the differences are 3.3, 9.1, 10.4, 9.1, 6.2, 2.5, 2.2, 8.4, 8.7, 14.4, 2.5, -2.8, -0.4, 5.0, and 11.5.



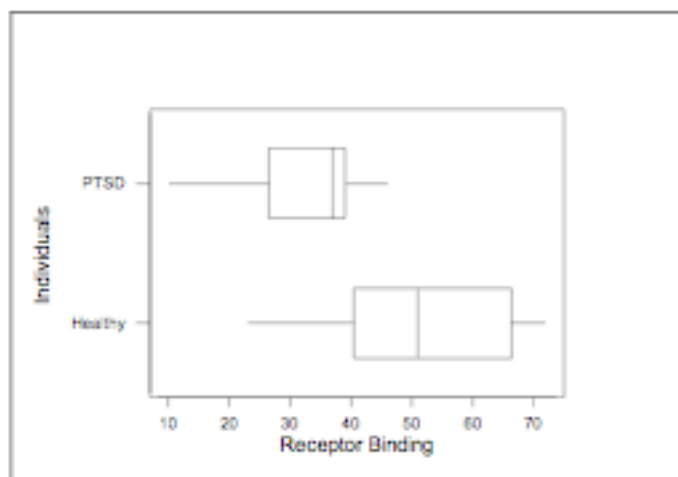
The majority of the differences are positive, which suggests that the weight training produced higher oxygen consumption for most subjects. The median difference is about 6 liters.

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72. A table of summary statistics, a stem and leaf display, and a comparative boxplot are below. The healthy individuals have higher receptor binding measure on average than the individuals with PTSD. There is also more variation in the healthy individuals' values. The distribution of values for the healthy is reasonably symmetric, while the distribution for the PTSD individuals is negatively skewed. The box plot indicates that there are no outliers, and confirms the above comments regarding symmetry and skewness.

|         | PTSD  | Healthy |  |      |   |
|---------|-------|---------|--|------|---|
| Mean    | 32.92 | 52.23   |  | 1    | 0 |
| Median  | 37    | 51      |  | 3    | 2 |
| Std Dev | 9.93  | 14.86   |  | 9    | 3 |
| Min     | 10    | 23      |  | 7310 | 4 |
| Max     | 46    | 72      |  | 81   | 5 |
|         |       |         |  | 9763 | 6 |
|         |       |         |  | 2    | 7 |

stem = tens  
leaf = ones



- 74.
- Mode = .93. It occurs four times in the data set.
  - The Modal Category is the one in which the most observations occur.