

Homework Solutions

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Exercise 15

- (a) True. On the average, the values are closer to the center. That is, the deviations are smaller and the variance is calculated from the deviations.
- (b) True.
- (c) False. It means that the first and third quartiles are equal, but that does not mean that the min and max must be equal. For example, in the set 5, 6, 6, 6, 6, 6, 7, the range is $7 - 5 = 2$, but $Q_1 = 6$ and $Q_3 = 6$, so the IQR is 0.
- (d) True. The mean is always between the min and the max and if the max is greater than the min, then the mean is larger than the min and smaller than the max. So the only way that the mean could equal the min is for the max and the min themselves to be equal.
- (e) False. The min is between 10 and 15 and the max is between 25 and 30, but the min could be greater than 10 and the max could be less than 30, making the range less than $30 - 10$.