|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 0 | 2 | 4 | 6 | 16 |
|  | 6 | 6 | 6 | 6 | 6 |
|  | 7 | 7 | 7 | 7 | 7 |
|  | 7 | 7 | 7 | 7 | 7 |
|  | 8 | 8 | 8 | 8 | 8 |
|  | 8 | 8 | 8 | 8 | 8 |
|  | 8 | 8 | 8 | 8 | 8 |
|  | 9 | 9 | 9 | 9 | 9 |
|  | 9 | 9 | 9 | 9 | 9 |
|  | 10 | 10 | 10 | 10 | 10 |
| **Mean** | *7.2* | *7.4* | *7.6* | *7.8* | *8.8* |
| **Median** | *8* | *8* | *8* | *8* | *8* |
| **St/Dev** | *2.63818* | *2.10713* | *1.62481* | *1.249* | *2.63818* |

As the outliers increase and get closer to the median the standard deviation decrease. This tells us that the outlier is no longer an outlier and now belongs to the cluster of normalized data. If the outlier is increased on the other end of the extreme the standard deviation will increase.

In our example, the initial number zero was 8 numbers away from the mean with a standard deviation of ~2.64. Changing the outlier from 0 to 16 will once again cause the outlier to be 8 numbers away from the mean. In this scenario, our standard deviation will also be ~2.64 since the calculation squares the values, no other numbers in the group are changing, and the distance between both extremes to the mean are equal.