5:14

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | Data collected on the yearly demand for 50-pound bags of fertilizer at Wallace Garden Supply are shown in the following table. Develop a three-year moving average to forecast sales. Then estimate demand again with a weighted moving average in which sales in the most recent year are given a weight of 2 and sales in the other two years are each given the weight of 1. Which method do you think is best? | | | | | | | | | | | |  |
|  |
|  |
|  |
|  |  |  |  |  |  |  |  |  |  |  |
| **3 period moving averages** | | | | |  |  |  |  |  |  |
| Year | Demand | Forecast | Error | Absolute error |  |  |  |  |  |  |
| 1 | 4 |  |  |  |  |  |  |  |  |  |
| 2 | 6 |  |  |  |  |  |  |  |  |  |
| 3 | 4 |  |  |  |  |  |  |  |  |  |
| 4 | 5 | 4.67 | 0.33 | 0.33 |  |  |  |  |  |  |
| 5 | 10 | 5.00 | 5.00 | 5.00 |  |  |  |  |  |  |
| 6 | 8 | 6.33 | 1.67 | 1.67 |  |  |  |  |  |  |
| 7 | 7 | 7.67 | -0.67 | 0.67 |  |  |  |  |  |  |
| 8 | 9 | 8.33 | 0.67 | 0.67 |  |  |  |  |  |  |
| 9 | 12 | 8.00 | 4.00 | 4.00 |  |  |  |  |  |  |
| 10 | 14 | 9.33 | 4.67 | 4.67 |  |  |  |  |  |  |
| 11 | 15 | 11.67 | 3.33 | 3.33 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Next period** | **13.67** |  |  |  |  |  |  |  |  |  |
| **MAD** | **2.54** |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Weighted moving averages** | | | | | |  |  |  |  |  |
| Year | Actual value | Weights | Forecast | Error | Absolute error |  |  |  |  |  |
| 1 | 4 | 1 |  |  |  |  |  |  |  |  |
| 2 | 6 | 1 |  |  |  |  |  |  |  |  |
| 3 | 4 | 2 |  |  |  |  |  |  |  |  |
| 4 | 5 |  | 4.50 | 0.50 | 0.50 |  |  |  |  |  |
| 5 | 10 |  | 5.00 | 5.00 | 5.00 |  |  |  |  |  |
| 6 | 8 |  | 7.25 | 0.75 | 0.75 |  |  |  |  |  |
| 7 | 7 |  | 7.75 | -0.75 | 0.75 |  |  |  |  |  |
| 8 | 9 |  | 8.00 | 1.00 | 1.00 |  |  |  |  |  |
| 9 | 12 |  | 8.25 | 3.75 | 3.75 |  |  |  |  |  |
| 10 | 14 |  | 10.00 | 4.00 | 4.00 |  |  |  |  |  |
| 11 | 15 |  | 12.25 | 2.75 | 2.75 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Next period** | **14.00** |  |  |  |  |  |  |  |  |  |
| **MAD** | **2.313** |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Weighted moving average is slightly more accurate than 3-period moving average as MAD for Weighted moving average is less among the two.** | | | | | | | | | | |
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