

Chapter 15,
Problem 13

Problem 2: Exponential Smoothing

| Month | Time Series Value | Forecast | Forecast Error | Absolute Forecast Error | Squared Forecast Error | Percentage Error | Absolute Percentage Error |
|--------|-------------------|----------|----------------|-------------------------|------------------------|------------------|---------------------------|
| 1 | 240 | 240 | - | - | - | - | - |
| 2 | 350 | 240.00 | 110.00 | 110.00 | 12100.00 | 31.43 | 31.43 |
| 3 | 230 | 262.00 | -32.00 | 32.00 | 1024.00 | -13.91 | 13.91 |
| 4 | 260 | 255.60 | 4.40 | 4.40 | 19.36 | 1.69 | 1.69 |
| 5 | 280 | 256.48 | 23.52 | 23.52 | 553.19 | 8.40 | 8.40 |
| 6 | 320 | 261.18 | 58.82 | 58.82 | 3459.32 | 18.38 | 18.38 |
| 7 | 220 | 272.95 | -52.95 | 52.95 | 2803.41 | -24.07 | 24.07 |
| 8 | 310 | 262.36 | 47.64 | 47.64 | 2269.78 | 15.37 | 15.37 |
| 9 | 240 | 271.89 | -31.89 | 31.89 | 1016.73 | -13.29 | 13.29 |
| 10 | 310 | 265.51 | 44.49 | 44.49 | 1979.45 | 14.35 | 14.35 |
| 11 | 240 | 274.41 | -34.41 | 34.41 | 1183.85 | -14.34 | 14.34 |
| 12 | 230 | 267.53 | -37.53 | 37.53 | 1408.18 | -16.32 | 16.32 |
| Total: | | | | 477.64 | 27817.28 | 7.70 | 171.54 |

Smoothing Constant
0.2

MAEF 53.07 MSFE 3090.81 MAPE 19.06

Chapter 15,
Problem 13

Problem 2: Three-Month moving average

| Month | Time Series Value | Forecast | Forecast Error | Absolute Forecast Error | Squared Forecast Error | Percentage Error | Absolute Percentage Error |
|--------|-------------------|----------|----------------|-------------------------|------------------------|------------------|---------------------------|
| 1 | 240 | - | - | - | - | - | - |
| 2 | 350 | - | - | - | - | - | - |
| 3 | 230 | - | - | - | - | - | - |
| 4 | 260 | 273.33 | -13.33 | 13.33 | 177.78 | -5.13 | 5.13 |
| 5 | 280 | 280.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 320 | 256.67 | 63.33 | 63.33 | 4011.11 | 19.79 | 19.79 |
| 7 | 220 | 286.67 | -66.67 | 66.67 | 4444.44 | -30.30 | 30.30 |
| 8 | 310 | 273.33 | 36.67 | 36.67 | 1344.44 | 11.83 | 11.83 |
| 9 | 240 | 283.33 | -43.33 | 43.33 | 1877.78 | -18.06 | 18.06 |
| 10 | 310 | 256.67 | 53.33 | 53.33 | 2844.44 | 17.20 | 17.20 |
| 11 | 240 | 286.67 | -46.67 | 46.67 | 2177.78 | -19.44 | 19.44 |
| 12 | 230 | 263.33 | -33.33 | 33.33 | 1111.11 | -14.49 | 14.49 |
| Total: | | | | 356.67 | 17988.89 | -38.60 | 136.25 |

MAEF 39.63 MSFE 1998.77 MAPE 15.14