

Answer on Question #83854 – Math – Statistics and Probability

Question

Estimate the demand forecast for the year 1992, using exponential smoothing method. Assume $X = 0.3$ take the forecast for the year 1984 as 160. Plot the actual demand and forecast values on the graph paper.

Year	1984	1985	1986	1987	1988	1989	1990	1991
Demand	180	168	159	170	188	205	190	210

Solution

Forecast for the current period:

$$F_t = (1 - X)F_{t-1} + XA_{t-1}$$

where F_{t-1} is forecast for the previous period, A_{t-1} is actual demand for the period.

Then:

$$F_{1985} = (1 - 0.3) \cdot 160 + 0.3 \cdot 180 = 166$$

$$F_{1986} = (1 - 0.3) \cdot 166 + 0.3 \cdot 168 = 166.6$$

$$F_{1987} = (1 - 0.3) \cdot 166.6 + 0.3 \cdot 159 = 164.3$$

$$F_{1988} = (1 - 0.3) \cdot 164.3 + 0.3 \cdot 170 = 166$$

$$F_{1989} = (1 - 0.3) \cdot 166 + 0.3 \cdot 188 = 172.6$$

$$F_{1990} = (1 - 0.3) \cdot 172.6 + 0.3 \cdot 205 = 182.3$$

$$F_{1991} = (1 - 0.3) \cdot 182.3 + 0.3 \cdot 190 = 184.6$$

$$F_{1992} = (1 - 0.3) \cdot 184.6 + 0.3 \cdot 210 = 192.2$$

