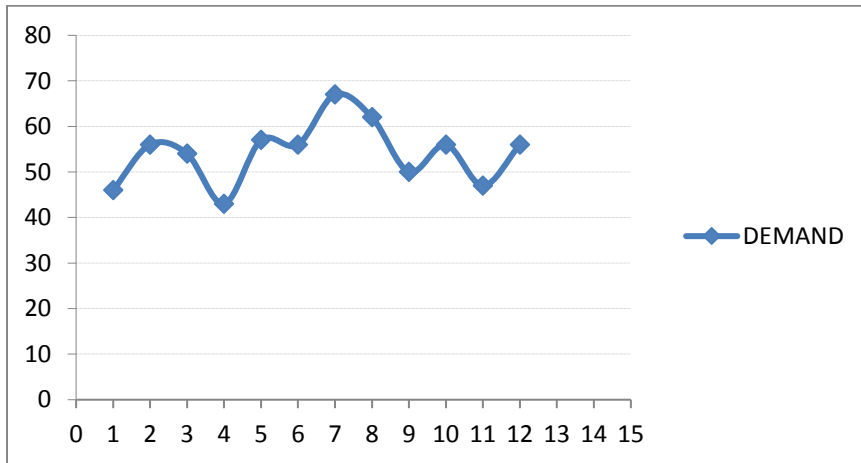## Question

Plot the following data about demand for an item. Find the moving averages by taking $n = 3$.
Use these to forecast next two months' demand.

Month   1 2   3 4 5   6   7 8 9 10 11 12
Demand 46 56 54 43 57 56 67 62 50 56 47 56

Solution

Plot:

Moving averages:
$$MA_3 = (46 + 56 + 54)/3 = 52$$
$$MA_4 = 52 + (43 - 46)/3 = 51$$
$$MA_5 = 51 + (57 - 56)/3 = 51.33 \ldots = 51$$
$$MA_6 = 51 + (56 - 54)/3 = 51.66 \ldots = 52$$
$$MA_7 = 52 + (67 - 43)/3 = 60$$
$$MA_8 = 60 + (62 - 57)/3 = 61.66 \ldots = 62$$
$$MA_9 = 62 + (50 - 56)/3 = 60$$
$$MA_{10} = 60 + (56 - 67)/3 = 56.33 \ldots = 56$$
$$MA_{11} = 56 + (47 - 62)/3 = 51$$
$$MA_{12} = 51 + (56 - 50)/3 = 53$$

Forecast:

$FC_{13} = (56 + 51 + 53)/3 = 53.33 \ldots = 53$
$FC_{14} = (51 + 53 + 53)/3 = 52.33 \ldots = 52$

Answer: