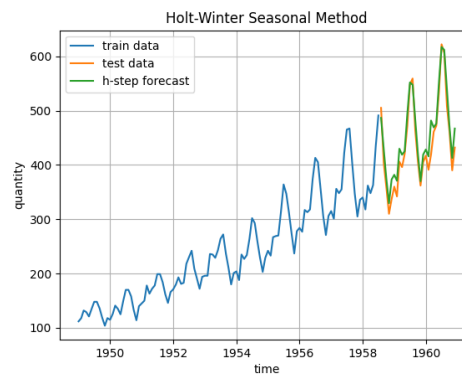
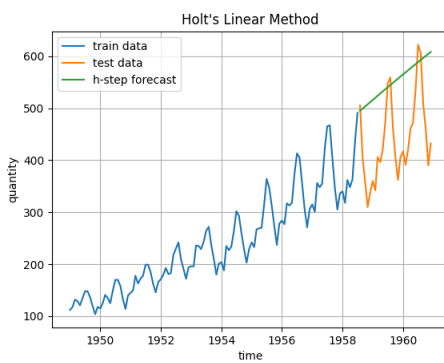
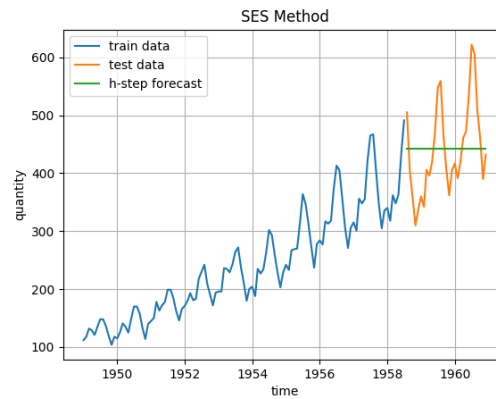
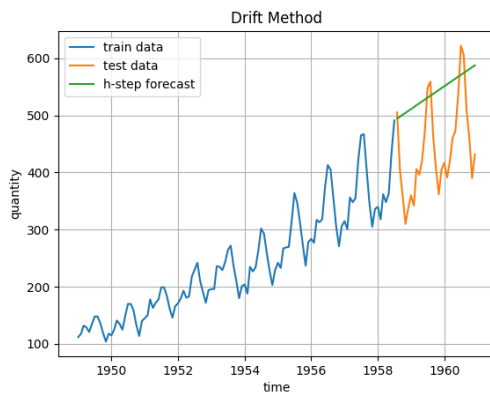
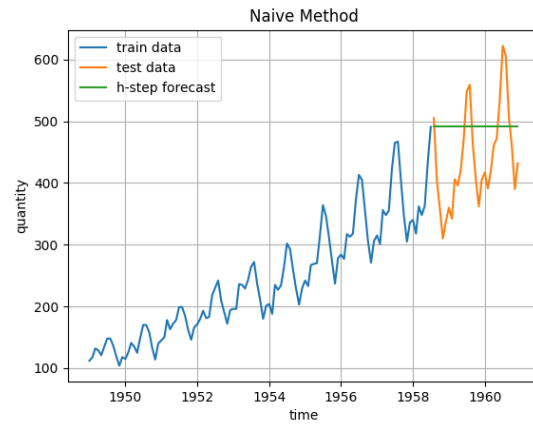
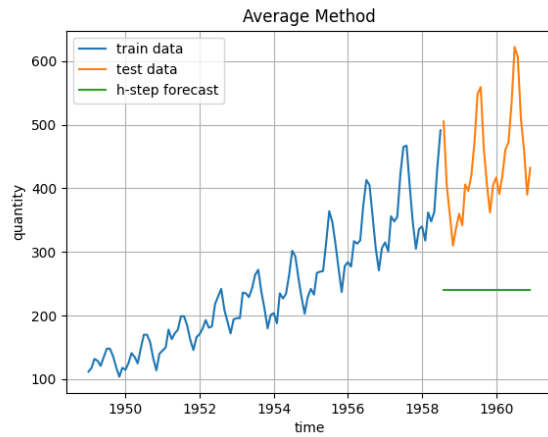


Bradley Reardon

## Time Series Forecasting and Analysis

### HW4

#### Question 2:



Question 3, 4, 6, 7:

	Method	MSE_forecast	Variance of prediction error	Variance of forecast error	Q Values	Correlation Coefficient
0	Average	46249.628809	NaN	6104.489893	NaN	1.000000
1	Naive	8673.931034	713.499923	6104.489893	133.272612	1.000000
2	Drift	15038.703280	725.938609	4926.776586	132.942851	0.935209
3	SES	6111.587941	1055.701407	6104.489893	238.134989	1.000000
4	Holt's Linear Model	17393.958653	715.285610	4872.172348	133.330869	0.901269
5	Holt-Winter Seasonal Model	508.640453	52.063365	236.061762	17.624722	0.503216

The variance of prediction error is much lower than the variance of forecast error.

The correlation coefficient is nearly 1 for all tests other than Holt-Winter seasonal model, meaning the errors are highly correlated for those near 1.

As we can observe in the plots, the Holt-Winter seasonal model performs the best at forecasting data, and can also be observed by noting it has the smallest MSE value.

Question 5:

