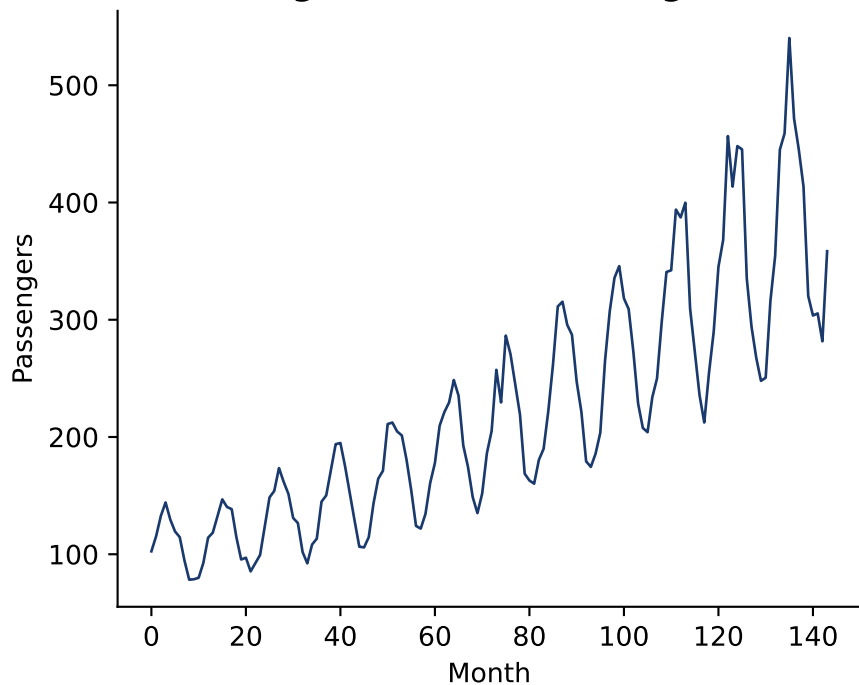
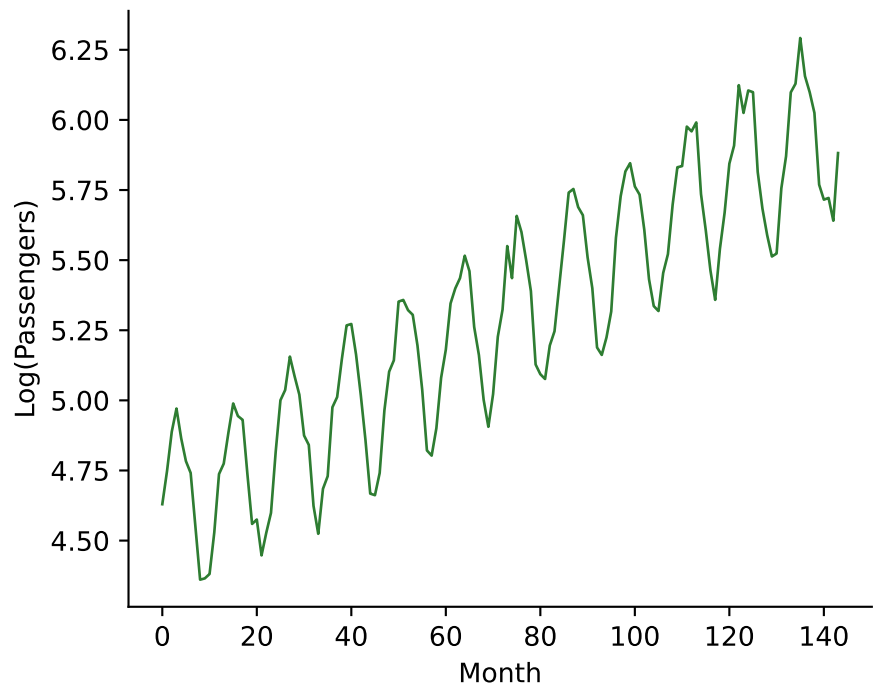


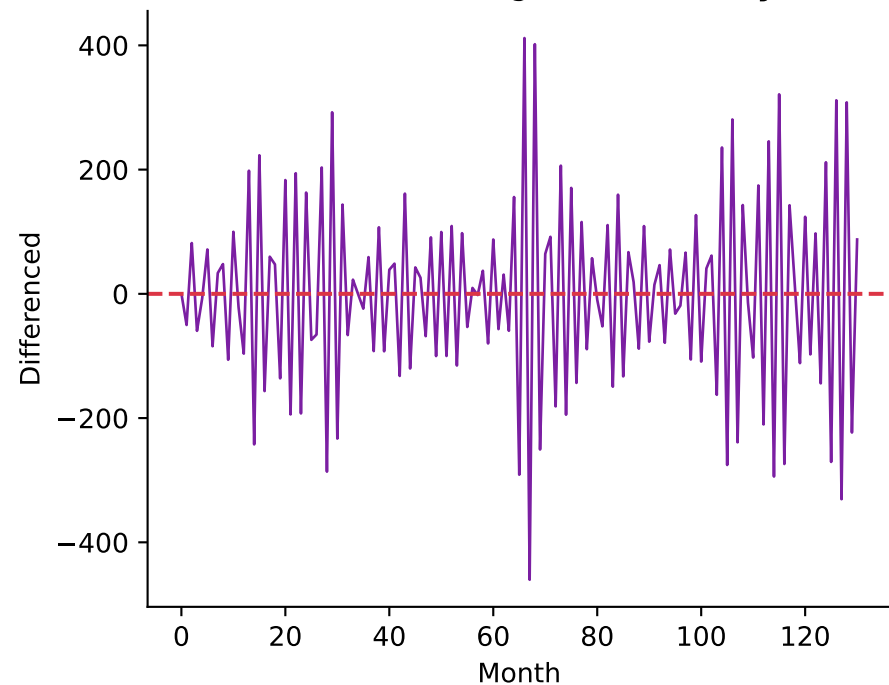
**Original: Airline Passengers**



**Log Transform:  $\log(Y_t)$**



**$(1 - L)(1 - L^{12})\log Y_t$ : Stationary!**



### **The Airline Model**

$$\text{SARIMA}(0, 1, 1) \times (0, 1, 1)_{12}$$

$$(1 - L)(1 - L^{12})Y_t = (1 + \theta L)(1 + \Theta L^{12})\varepsilon_t$$

Only 2 parameters:  $\theta$  and  $\Theta$

### **Why famous?**

- Fits many seasonal economic series remarkably well
- Extremely parsimonious (just 2 parameters)
- Box & Jenkins (1970) airline passenger data