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Time Series Answers

This was a lot of fun to do. Also submitted with these answers is a zip file that has PDF printouts of everything that we were supposed to do and the code used to do it. As you read this, please unzip that file and look through the results with names that should coincide with these answers.

1-18

a) 2004 = 7.22

2005 = 7.30

2006 = 7.41

b) September 2004

c) Yes, some days have no visits.

1-28

1. Yes, there is a seasonal cycle.
2. Yes there is a trend. It is not linear, it is quadratic (up then down).
3. Yes, the argument could be made, but correlation is not causation. So you could lie, but maybe it is true?

2-34

1. All Sales series (1-4) Show autocorrelation.

2-49

1. For series 1 it is not, but for 2, 3, and 4, it is.
2. For 2, 3, and 4 the residuals show that the model is good.

2-68

1. Done
2. Series 2 does not, but series 3 and 4 do correlate with RAMP.
3. For Sales 3 and 4 the model is sufficient.

2-95

1. The ARMA model does not catch the spike from the RAMP days. Very flat.
2. The ARMAX model catches the spike and is a lot better.
3. The ARMAX has a lower MAPE because it actually catches the spike.
4. Attached as 2-95.ARMAX.ctk-result

4-8to13

1. Attached as 4-13.Results

4-21to29

1. Attached as 4-21.FinalModel