Air pollution control specialists in southern California monitor the amount of ozone, carbon dioxide, and nitrogen dioxide in the air on an hourly basis. The hourly time series data exhibit seasonality, with the levels of pollutants showing similar patterns over the hours in the day. On July 15,16, and 17, the observed levels of nitrogen dioxide in a city’s downtown are for the 12 hours from 6:00 a.m. to 6:00 p.m. were as follows.

July 15 25 28 35 50 60 60 40 35 30 25 25 20

July 16 28 30 35 48 60 65 50 40 35 25 20 20

July 17 35 42 45 70 72 75 60 45 40 25 25 25

1. Identify the hourly seasonal indexes for the 12 hourly daily readings.
2. Based on the seasonal indexes in part (a), the trend equation developed for the depersonalized data is = 32.983 + 0.3922t. Using only the trend equation, develop forecasts for the 12 hours for July 18.
3. Use the seasonal indexes from part (a) to adjust the trend forecasts in part (b).