	Day	4–6 A.M.	6–8 A.M.	8–10 A.M.	10–Noon	Noon–2 P.M.	2–4 P.M.	4–6 P.M.	6–8 P.M.	8–10 P.M.
Year One	1	2400	2700	3200	1400	1700	1800	1600	800	200
	2	1900	2500	3100	1600	1800	2000	1800	900	300
	3	2300	3100	2500	1500	1500	1800	1900	1100	200
	4	2200	3200	3100	2200	1900	2400	2100	1200	400
	5	2400	3300	3400	1700	2200	2100	2000	1000	600
	6	2600	2800	3500	1500	1700	1900	1500	1100	300
	7	1900	2800	3100	1200	1500	2000	1400	900	400
	8	2000	2700	2500	1500	2000	2300	1900	1000	200
	9	2400	3200	3600	1600	2100	2500	1800	1400	200
	10	2600	3300	3100	200	2500	2600	2400	1100	400
Year Two	11	3100	3900	4100	2200	2600	2300	2500	1100	300
	12	2800	3400	3900	1900	2100	2500	2000	1200	300
	13	2700	3800	4300	2100	2400	2400	2400	1200	400
	14	2400	3500	4100	2400	3000	3200	2600	1200	700
	15	3300	3700	4000	2600	2600	2700	2900	1000	300
	16	3500	4000	3800	2300	2700	3100	3000	900	200
	17	2900	4100	3900	2400	3000	3200	2500	1100	500
	18	3400	3800	4200	2000	2500	3000	2200	1000	300
	19	3600	3600	4000	2300	2600	2800	2600	1200	200
	20	3700	3700	4000	2200	2600	2700	2400	1200	200
Year Three	21	4400	4400	4500	2600	3300	3400	3000	1200	400
	22	4200	4500	4300	2500	3400	3600	3100	1400	300
	23	4500	4500	4700	2700	3400	3500	2900	1200	300
	24	4600	4600	4600	2500	3200	3500	2800	1300	300
	25	4500	4300	4400	2900	3300	3300	3300	1500	400
	26	4200	4300	4500	3000	4000	3400	3000	1500	600
	27	4500	4500	5100	3300	4000	3700	3100	1200	300
	28	4300	4200	4300	2800	3500	4000	3300	1100	400
	29	4900	4100	4200	3100	3600	3900	3400	1400	500
	30	4700	4500	4100	3000	4000	3700	3400	1200	500

Develop a forecast for daily passenger arrivals at the South concourse at BEI for each time period for July of year 4. Discuss the various forecast model variations that might be used to develop this forecast.

Solutions to Selected Odd-Numbered Problems

1. (a) Apr = 8.67, May = 8.33, Jun = 8.33, Jul = 9.00, Aug = 9.67, Sep = 11.00, Oct = 11.00, Nov = 11.00, Dec = 12.00, Jan = 13.33; (b) Jun = 8.20, Jul = 8.80, Aug = 9.40, Sep = 9.60, Oct = 10.40, Nov = 11.00, Dec = 11.40, Jan = 12.60; (c) $MAD(3) = 1.89$, $MAD(5) = 2.43$
3. (a) $F_4 = 116.00$, $F_5 = 121.33$, $F_6 = 118.00$, $F_7 = 143.67$, $F_8 = 138.33$, $F_9 = 141.67$, $F_{10} = 135.00$, $F_{11} = 156.67$, $F_{12} = 143.33$, $F_{13} = 136.67$; (b) $F_6 = 121.80$, $F_7 = 134.80$, $F_8 = 125.80$, $F_9 = 137.20$, $F_{10} = 143.00$, $F_{11} = 149.00$, $F_{12} = 137.00$, $F_{13} = 142.00$; (c) $F_4 = 113.85$, $F_5 = 116.69$, $F_6 = 125.74$, $F_7 = 151.77$, $F_8 = 132.4$, $F_9 = 138.55$, $F_{10} = 142.35$, $F_{11} = 160.0$, $F_{12} = 136.69$, $F_{13} = 130.20$; (d) 3-qtr MA: $E = 32.0$, 5-qtr MA: $E = 36.4$, weighted MA: $E = 28.09$
5. (a) $\overline{F}_4 = 400.000$, $\overline{F}_5 = 406.67$, $\overline{F}_6 = 423.33$, $\overline{F}_7 = 498.33$, $\overline{F}_8 = 521.67$, $F_9 = 571.67$; (b) $F_2 = 400.00$, $F_3 = 410.00$, $F_4 = 398.00$, $F_5 = 402.40$, $F_6 = 421.92$, $F_7 = 452.53$, $F_8 = 460.00$, $F_9 = 498.02$; (c) 3-sem. $MAD = 80.33$, exp. smooth. $MAD = 87.16$
7. F_{11} (exp. smooth) = 68.6, F_{11} (adjusted) = 69.17, F_{11} (linear trend) = 70.22; exp. smooth: $E = 14.75$, $MAD = 1.89$; adjusted: $E = 10.73$, $MAD = 1.72$; linear trend: $MAD = 1.09$
9. (a) $F_{21} = 74.67$, $MAD = 3.12$; (b) $F_{21} = 75.875$, $MAD = 2.98$; (c) $F_{21} = 74.60$, $MAD = 2.87$; (d) 3-mo. moving average and exponentially smoothed
11. $F_{13} = 631.22$, $\overline{E} = 26.30$, $E = 289.33$, biased low
13. $F_1 = 155.6$, $F_2 = 192.9$, $F_3 = 118.2$, $F_4 = 155.6$
15. F_{04} (adjusted) = 3,313.19, F_{04} (linear trend) = 2,785.00; adjusted: $MAD = 431.71$; linear trend: $MAD = 166.25$
17. Linear trend line $-F(37) = 347.33$; exponential smoothing ($\alpha = .20$) $-F(37) = 460.56$; 5-mo. moving avg. $-F(37) = 467.80$
19. fall = 44.61, winter = 40.08, spring = 52.29, summer = 70.34; yes
21. F_9 (exp. smooth) = 492.31, F_9 (adjusted) = 503.27
23. $E = 86.00$, $\overline{E} = 8.60$, $MAD = 15.00$, $MAPD = 0.08$
25. MAD: $MA = 1.89$, exp. smooth = 2.16; 3-mo. moving average