Index Demand Theta S Order Quantities

1 108 42583.2 4 343

2 112 41925.6 5 0

3 123 41320.8 5 0

4 129 40624.0 7 426

5 147 39911.2 7 0

6 150 39243.2 9 0

7 156 38451.2 9 330

8 174 37860.0 11 0

9 189 36933.6 11 386

10 197 36342.4 13 0

11 202 35360.8 13 409

12 207 34787.2 14 0

13 228 33764.0 15 468

14 240 33140.0 16 0

15 242 32088.0 17 483

16 241 31459.2 18 0

17 266 30409.6 19 533

18 267 29720.8 20 0

19 270 28668.8 21 560

20 290 27972.8 21 0

21 303 26872.8 23 604

22 301 26150.4 23 0

23 329 25050.4 25 654

24 325 24268.0 26 0

25 345 23170.4 27 688

26 343 22340.0 28 0

27 367 21247.2 29 707

28 340 20359.2 30 0

29 337 19331.2 31 660

30 323 18450.4 32 0

31 325 17456.0 33 634

32 309 16570.4 34 0

33 305 15614.4 35 598

34 293 14738.4 36 0

35 273 13811.2 37 546

36 273 12983.2 38 0

37 252 12056.0 39 501

38 249 11278.4 40 0

39 243 10358.4 41 478

40 235 9595.2 42 0

41 226 8694.4 43 430

42 204 7952.8 44 0

43 204 7104.8 45 387

44 183 6363.2 46 0

45 175 5565.6 47 339

46 164 4843.2 48 0

47 162 4072.0 50 461

48 154 3354.4 50 0

49 145 2772.8 53 0

50 137 1906.4 53 361

51 112 1368.8 53 0

52 112 1100.0 53 0

53 0

The optimal order quantities in each period are shown in the above table.

The optimal total cost is $42583.2.