

Month	Demand
1	20
2	40
3	110
4	120
5	60
6	30
7	20
8	30
9	80
10	120
11	130
12	40
	800
A	25
h	0,2

Step 1:	$z1^* = A1$	25	
	$j1^* = 1$		
Step 2:	$z2^* = \min$	$A1 + h1D2 =$	33
		$z1^* + A2 =$	50
	$z2^* =$	33	
	$j2^* = 1$		
Step 3:	$z3^* = \min$	$A1 + h1D2 + (h1+h2)D3 =$	77
		$z1^* + A2 + h2D3 =$	72
		$z2^* + A3 =$	58
	$z3^* =$	58	
	$j3^* = 3$		
Step 4:	$z4^* = \min$	$z2^* + A3 + h3D4 =$	82
		$z3^* + A4 =$	83
	$z4^* =$	82	
	$j4^* = 3$		
Step 5:	$z5^* = \min$	$z2^* + A3 + h3D4 + (h4+h5)D5 =$	106
		$z3^* + A4 + h4D5 =$	95
		$z4^* + A5 =$	107
	$z5^* =$	95	
	$j5^* = 4$		
Step 6:	$z6^* = \min$	$z3^* + A4 + h4D5 + (h4+h5)D6 =$	107
		$z4^* + A5 + h5D6 =$	113
		$z5^* + A6 =$	120
	$z6^* =$	107	
	$j6^* = 4$		
Step 7:	$z7^* = \min$	$z3^* + A4 + h4D5 + (h4+h5)D6 + (h4+h5+h6)D7 =$	119
		$z4^* + A5 + h5D6 + (h5+h6)D7 =$	121
		$z5^* + A6 + h6D7 =$	124
		$z6^* + A7 =$	132
	$z7^* =$	119	
	$j7^* = 4$		
Step 8:	$z8^* = \min$	$z3^* + A4 + h4D5 + (h4+h5)D6 + (h4+h5+h6)D7 + (h4+h5+h6+h7)D8 =$	143
		$z4^* + A5 + h5D6 + (h5+h6)D7 + (h5+h6+h7)D8 =$	139
		$z5^* + A6 + h6D7 + (h6+h7)D8 =$	136
		$z6^* + A7 + h7D8 =$	138
		$z7^* + A8 =$	144
	$z8^* =$	136	
	$j8^* = 6$		
Step 9:	$z9^* = \min$	$z5^* + A6 + h6D7 + (h6+h7)D8 + (h6+h7+h8)D9 =$	184
		$z6^* + A7 + h7D8 + (h7+h8)D9 =$	170
		$z7^* + A8 + h8D9 =$	160
		$z8^* + A9 =$	161
	$z9^* =$	160	
	$j9^* = 8$		
Step 10:	$z10^* = \min$	$z7^* + A8 + h8D9 + (h8+h9)D10$	208

SUMMARY TABLE

Last Period with Ordering	Planning Horizon (t)											
	1	2	3	4	5	6	7	8	9	10	11	12
1	25	33	77									
2		50	72									
3			58	82	106							
4				83	95	107	119	143				
5					107	113	121	139				
6						120	124	136	184			
7							132	138	170			
8								144	160	208		
9									161	185	237	
10										185	211	
11											210	218
12												235
zt	25	33	58	82	95	107	119	136	160	185	210	218
jt	1	1	3	3	4	4	4	6	8	9, 10	11	11

$$Q1 = D1+D2 = 20+40 = 60$$

$$Q3 = D3 = 110$$

$$Q4 = D4+D5+D6+D7 = 120+60+30+20 = 230$$

$$Q8 = D8+D9 = 30+80 = 110$$

$$Q10 = D10 = 120 \text{ (to reduce carrying cost)}$$

$$Q11 = D11+D12 = 130+40 = 170$$

(preferable)

OR

$$Q1 = D1+D2 = 20+40 = 60$$

$$Q3 = D3 = 110$$

$$Q4 = D4+D5 = 120+60 = 180$$

$$Q6 = D6+D7+D8 = 30+20+30 = 80$$

$$Q9 = D9+D10 = 80+120 = 200$$

$$Q11 = D11+D12 = 130+40 = 170$$

	$z8^* + A9 + h9D10 =$	185
	$z9^* + A10 =$	185
$z10^* =$	185	
$j10^* = 9 \text{ or } 10$		

Step 11:

$z11^* = \min$	$z8^* + A9 + h9D10 + (h9+h10)D1$	237
	$z9^* + A10 + h10D11 =$	211
	$z10^* + A11 =$	210
$z11^* =$	210	
$j11^* = 11$		

Step 12:

$z12^* = \min$	$z10^* + A11 + h11D12 =$	218
	$z11^* + A12 =$	235
$z12^* =$	218	
$j12^* = 11$		

t	1	2	3	4	5	6	7	8	9	10	11	12	Total
Dt	20	40	110	120	60	30	20	30	80	120	130	40	800
Qt	60		110	230				110		120	170		800
It	40	0	0	110	50	20	0	80	0	0	40	0	340
Setup cost	25	0	25	25	0	0	0	25	0	25	25	0	150
Holding cost	8	0	0	22	10	4	0	16	0	0	8	0	68
Total cost	33	0	25	47	10	4	0	41	0	25	33	0	218

t	1	2	3	4	5	6	7	8	9	10	11	12	Total
Dt	20	40	110	120	60	30	20	30	80	120	130	40	800
Qt	60		110	180		80			200		170		800
It	40	0	0	60	0	50	30	0	120	0	40	0	340
Setup cost	25	0	25	25	0	25	0	0	25	0	25	0	150
Holding cost	8	0	0	12	0	10	6	0	24	0	8	0	68
Total cost	33	0	25	37	0	35	6	0	49	0	33	0	218

