Sidbury, Dennis

8.13(a)

E204-2

Objective:

Determine most EOQ and total (minimum)

Problem Set #3

Ch. 8, #8.13(a) only, 8.15 (a)-(d) only, 8.19

(2 of 3)

Date Due: 4/13/00

Annual demand	1,500	given
Minimum order	1	Constraint
Maximum order	499	Constraint
Cost per Unit	$ 35	given
Cost per Order	$ 20	given
Holding Cost	20%	given
Order Quantity	93	<====Changing Cell #1
Purchasing Cost	$ 52,500	Cost x demand
Cost of Ordering	$ 324	Demand/Order Quantity*Cost per Order
Inventory Cost	$ 324	Avg. Inv. * Cost per unit * Holding Cost
Total Cost	***$ 53,148***	<====Target Cell #1
Annual demand	1,500	given
Minimum order	500	Constraint
Maximum order	999	Constraint
Cost per Unit	$ 33	given
Cost per Order	$ 20	given
Holding Cost	20%	given
Order Quantity	500	<====Changing Cell #2
Purchasing Cost	$ 49,500	Cost x demand
Cost of Ordering	$ 60	Demand/Order Quantity*Cost per Order
Inventory Cost	$ 1,650	Avg. Inv. * Cost per unit * Holding Cost
Total Cost	***$ 51,210***	<====Target Cell #2
Annual demand	1,500	given
Minimum order	1,000	Constraint
Maximum order	1,500	Constraint
Cost per Unit	$ 31	given
Cost per Order	$ 20	given
Holding Cost	20%	given
Order Quantity	1000	<====Changing Cell #3

8.15								
$1,000-$1,500								
Aqua-demand=300-0.175xprice			Objective: [Person_1] profit (i.e. determine [Person_2]. price) and, in turn, determine					
Hydro-demand=325-0.15xprice			optimal product mix.					
Aqua cost/unit =		850	1 pump	9hrslabor	12ft tubing			
Hydro cost/unit=		700	1 pump	6 hrs labor	16 ft tubing			
			200	1566	2800			
	(a)-(c)		[Person_3]	Hyrdro-Luxes	Total			
		Price	$ 1,282	$ 1,433	<===Changing cells outlined			
		Demand	76	110	per regression			
		Cost	$ 850	$ 700	given			
		Unit Profit	$ 432	$ 733				
Unit Profit x Demand====>		Profit	$ 32,681	$ 80,667	***$ 113,347***	<====Target Cell		
	[Person_4]				Used		Available	
		Pumps	1	1	186	<=	200	
		Labor	9	6	1,341	<=	1,566	
		Tubing	12	16	2,668	<=	2,800	
		$1,000<=Price<=$1,500						
	(d) None of the resource constraints are binding at the optimal solution.							