

Output Decision

Short Run with Capital Stock Fixed

Linear Demand Curve: $P = A - B \cdot Q$

Total Cost Equation: $TC = 1800 + 72 \cdot Q^2$

A	4,000
B	300

	Q	Price	TR	TC	Profit	AC	AR	AR-AC	MC	MR	MR-MC
	0	4,000	0	1,800	-1,800	--	--		--	--	
	1	3,700	3,700	1,872	1,828	1,872	3,700	1,828	72	3,700	3,628
	2	3,400	6,800	2,088	4,712	1,044	3,400	2,356	216	3,100	2,884
	3	3,100	9,300	2,448	6,852	816	3,100	2,284	360	2,500	2,140
	4	2,800	11,200	2,952	8,248	738	2,800	2,062	504	1,900	1,396
Profit max	5	2,500	12,500	3,600	8,900	720	2,500	1,780	648	1,300	652
	6	2,200	13,200	4,392	8,808	732	2,200	1,468	792	700	-92
	7	1,900	13,300	5,328	7,972	761	1,900	1,139	936	100	-836
	8	1,600	12,800	6,408	6,392	801	1,600	799	1,080	-500	-1,580
	9	1,300	11,700	7,632	4,068	848	1,300	452	1,224	-1,100	-2,324
Output max	10	1,000	10,000	9,000	1,000	900	1,000	100	1,368	-1,700	-3,068
	11	700	7,700	10,512	-2,812	956	700	-256	1,512	-2,300	-3,812
	12	400	4,800	12,168	-7,368	1,014	400	-614	1,656	-2,900	-4,556
	13	100	1,300	13,968	-12,668	1,074	100	-974	1,800	-3,500	-5,300
	14	-200	-2,800	15,912	-18,712	1,137	-200	-1,337	1,944	-4,100	-6,044
	15	-500	-7,500	18,000	-25,500	1,200	-500	-1,700	2,088	-4,700	-6,788
	16	-800	-12,800	20,232	-33,032	1,265	-800	-2,065	2,232	-5,300	-7,532
	17	-1,100	-18,700	22,608	-41,308	1,330	-1,100	-2,430	2,376	-5,900	-8,276
	18	-1,400	-25,200	25,128	-50,328	1,396	-1,400	-2,796	2,520	-6,500	-9,020
	19	-1,700	-32,300	27,792	-60,092	1,463	-1,700	-3,163	2,664	-7,100	-9,764
	20	-2,000	-40,000	30,600	-70,600	1,530	-2,000	-3,530	2,808	-7,700	-10,508
	21	-2,300	-48,300	33,552	-81,852	1,598	-2,300	-3,898	2,952	-8,300	-11,252
	22	-2,600	-57,200	36,648	-93,848	1,666	-2,600	-4,266	3,096	-8,900	-11,996
	23	-2,900	-66,700	39,888	-106,588	1,734	-2,900	-4,634	3,240	-9,500	-12,740

Equation

$P = A - B \cdot Q$

$TR = P \cdot Q$

$TC = 1800 + 72 \cdot Q^2$

$\text{Profit} = TR - TC$