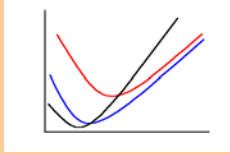


A Competitive Industry-More



A Tabular Analysis

Q	TC
0	100
1	115
2	126
3	136
4	148
5	165
6	186
7	217
8	256
9	306
10	360

•All firms have this cost function

MC, AC and AVC

Q	TC	MC	AC	AVC
0	100			
1	115	15	115.0	15.0
2	126	11	63.0	13.0
3	136	10	45.3	12.0
4	148	12	37.0	12.0
5	165	17	33.0	13.0
6	186	21	31.0	14.3
7	217	31	31.0	16.7
8	256	39	32.0	19.5
9	306	50	34.0	22.9
10	360	54	36.0	26.0

Computing MC, AC and AVC is straightforward

Computation Review

Q	TC	MC	AC	AVC
0	100			
1	115	15	115.0	15.0
2	126	11	63.0	13.0
3	136	10	45.3	12.0
4	148	12	37.0	12.0
5	165	17	33.0	13.0
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7	217	31	31.0	16.7
8	256	39	32.0	19.5
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10	360	54	36.0	26.0

A quick review

The Minimums

Q	TC	MC	AC	AVC
0	100			
1	115	15	115.0	15.0
2	126	11	63.0	13.0
3	136	10	45.3	12.0
4	148	12	37.0	12.0
5	165	17	33.0	13.0
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Minimums of AC and AVC

The Supply Function

Q	TC	MC	AC	AVC
0	100			
1	115	15	115.0	15.0
2	126	11	63.0	13.0
3	136	10	45.3	12.0
4	148	12	37.0	12.0
5	165	17	33.0	13.0
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P	1 Firm
12	4
17	5
21	6
31	7
39	8
50	9

The Supply Function

Q	TC	MC	AC	AVC
0	100			
1	115	15	115.0	15.0
2	126	11	63.0	13.0
3	136	10	45.3	12.0
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10	360	54	36.0	26.0

P	1 Firm
12	4
17	5
21	6
31	7
39	8
50	9

Supply Function with Multiple Firms

Q	TC	MC	AC	AVC
0	100			
1	115	15	115.0	15.0
2	126	11	63.0	13.0
3	136	10	45.3	12.0
4	148	12	37.0	12.0
5	165	17	33.0	13.0
6	186	21	31.0	14.3
7	217	31	31.0	16.7
8	256	39	32.0	19.5
9	306	50	34.0	22.9
10	360	54	36.0	26.0

P	1 Firm	3 Firms	10 Firms	100 Firms
12	4	12	40	400
17	5	15	50	500
21	6	18	60	600
31	7	21	70	700
39	8	24	80	800
50	9	27	90	900

Supply and Demand

P	Q
12	2172
17	1785
21	1475
31	700
39	80
50	0

Supply Function
→
Demand Function
←

P	1 Firm	3 Firms	10 Firms	100 Firms
12	4	12	40	400
17	5	15	50	500
21	6	18	60	600
31	7	21	70	700
39	8	24	80	800
50	9	27	90	900

Supply and Demand

P	Q
12	2172
17	1785
21	1475
31	700
39	80
50	0

Initially, 10 firms

P	1 Firm	3 Firms	10 Firms	100 Firms
12	4	12	40	400
17	5	15	50	500
21	6	18	60	600
31	7	21	70	700
39	8	24	80	800
50	9	27	90	900

Supply and Demand

P	Q
12	2172
17	1785
21	1475
31	700
39	80
50	0

Initially, 10 firms
This is an entry signal

P	1 Firm	3 Firms	10 Firms	100 Firms
12	4	12	40	400
17	5	15	50	500
21	6	18	60	600
31	7	21	70	700
39	8	24	80	800
50	9	27	90	900

Supply and Demand

P	Q
12	2172
17	1785
21	1475
31	700
39	80
50	0

Price must drop to 31. That means 100 firms

P	1 Firm	3 Firms	10 Firms	100 Firms
12	4	12	40	400
17	5	15	50	500
21	6	18	60	600
31	7	21	70	700
39	8	24	80	800
50	9	27	90	900

A Mathematical Example

$$Q = 100 - 6P$$
$$C = 4 + 5q + q^2$$

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$$q = 4/q$$

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$$q = 4/q$$
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$$q = 4/q$$

$$q^2 = 4$$

$$q = 2$$

A Mathematical Example

$$Q = 100 - 6P$$

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$$q = 4/q$$

$$q^2 = 4$$

$$q = 2$$

$$AC = 4/2 + 5 + 2 = 9$$

A Mathematical Example

$$Q = 100 - 6P$$

$$C = 4 + 5q + q^2$$

$$P = 9$$

$$AC = 4/q + 5 + q$$

$$MC = 5 + 2q$$

$$5 + 2q = 4/q + 5 + q$$

$$q = 4/q$$

$$q^2 = 4$$

$$q = 2$$

$$AC = 4/2 + 5 + 2 = 9$$

A Mathematical Example

$$Q = 100 - 6P$$

$$C = 4 + 5q + q^2$$

$$P = 9$$

$$Q = 100 - 6(9) = 46$$

$$AC = 4/q + 5 + q$$

$$MC = 5 + 2q$$

$$5 + 2q = 4/q + 5 + q$$

$$q = 4/q$$

$$q^2 = 4$$

$$q = 2$$

$$AC = 4/2 + 5 + 2 = 9$$

A Mathematical Example

$$Q = 100 - 6P$$

$$C = 4 + 5q + q^2$$

$$P = 9$$

$$Q = 100 - 6(9) = 46$$

$$N = 46/2 = 23$$

$$AC = 4/q + 5 + q$$

$$MC = 5 + 2q$$

$$5 + 2q = 4/q + 5 + q$$

$$q = 4/q$$

$$q^2 = 4$$

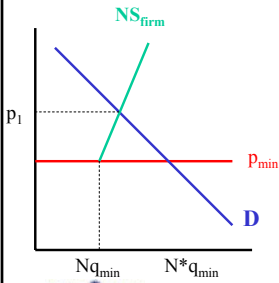
$$q = 2$$

$$AC = 4/2 + 5 + 2 = 9$$

A Summing Up

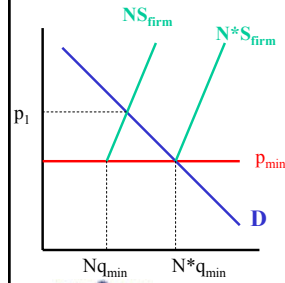
- A firm's supply curve is simply its MC curve.

A Summing Up



- A firm's supply curve is simply its MC curve
- If there are N firms, equilibrium will be at p_1 .

A Summing Up



- A firm's supply curve is simply its MC curve
- If there are N firms, equilibrium will be at p_1 .
- As firms enter, the price will fall to p_{min} , the LR supply curve.

End

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