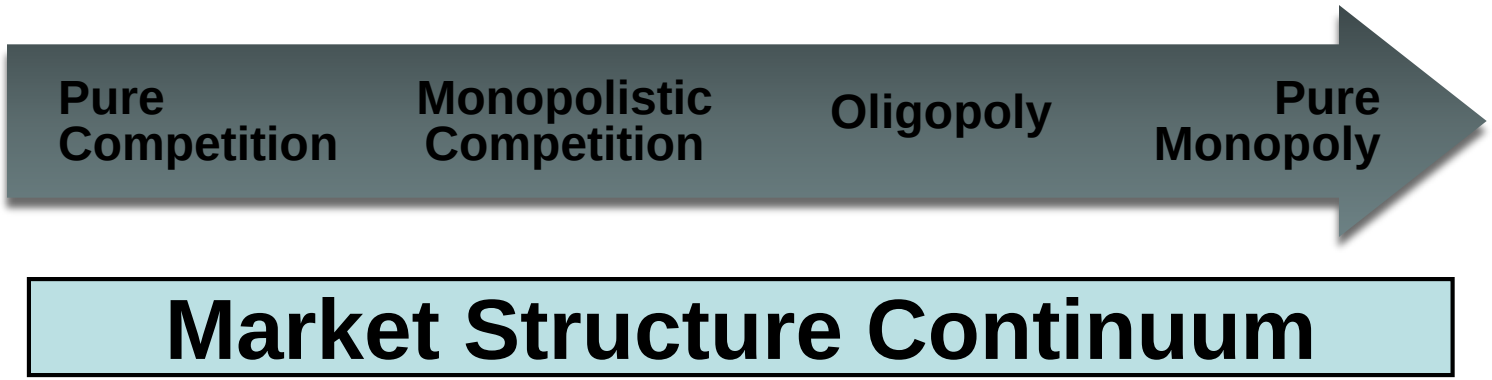
Pure Competition in the Short Run

From:

Book 1: Chapter 10

Four Market Models

- Pure competition
- Pure monopoly
- Monopolistic competition
- Oligopoly



Market Structure Continuum

Four Market Models

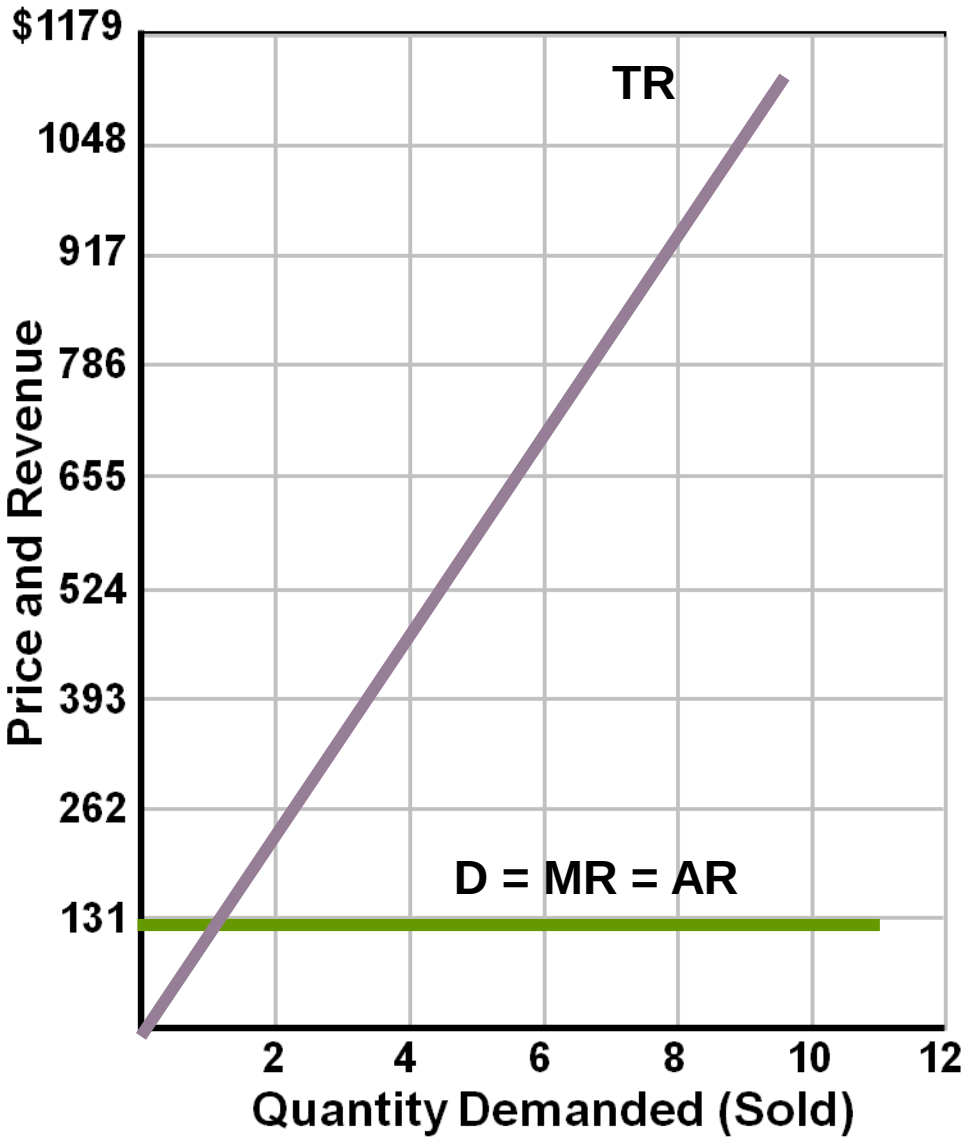
Characteristics of the Four Basic Market Models				
Characteristic	**Pure Competition**	**Monopolistic Competition**	**Oligopoly**	**Monopoly**
Number of firms	A very large number	Many	Few	One
Type of product	Standardized	Differentiated	Standardized or differentiated	Unique; no close subs.
Control over price	None	Some, but within rather narrow limits	Limited by mutual inter-dependence; considerable with collusion	Considerable
Conditions of entry	Very easy, no obstacles	Relatively easy	Significant obstacles	Blocked
Nonprice Competition	None	Considerable emphasis on advertising, brand names, trademarks	Typically a great deal, particularly with product differentiation	Mostly public relation advertising
Examples	Agriculture	Retail trade, dresses, shoes	Steel, auto, farm implements	Local utilities

Pure Competition: Characteristics

- Very large numbers of sellers
- Standardized product
- "Price takers"
- Easy entry and exit
- Perfectly elastic demand
  - Firm produces as much or little as they want at the price
  - Demand graphs as horizontal line

Average, Total, and Marginal Revenue

Firm's Demand Schedule (Average Revenue)		Firm's Revenue Data	
Q_D	P	TR	MR
0	$131	$0	
1	131	131	$131
2	131	262	131
3	131	393	131
4	131	524	131
5	131	655	131
6	131	786	131
7	131	917	131
8	131	1048	131
9	131	1179	131
10	131	1310	131



Average, Total, and Marginal Revenue

- Average Revenue
  - Revenue per unit
  - AR = TR/Q = P
- Total Revenue
  - TR = P X Q
- Marginal Revenue
  - Extra revenue from 1 more unit
  - MR = ΔTR/ΔQ

Profit Maximization: TR–TC Approach

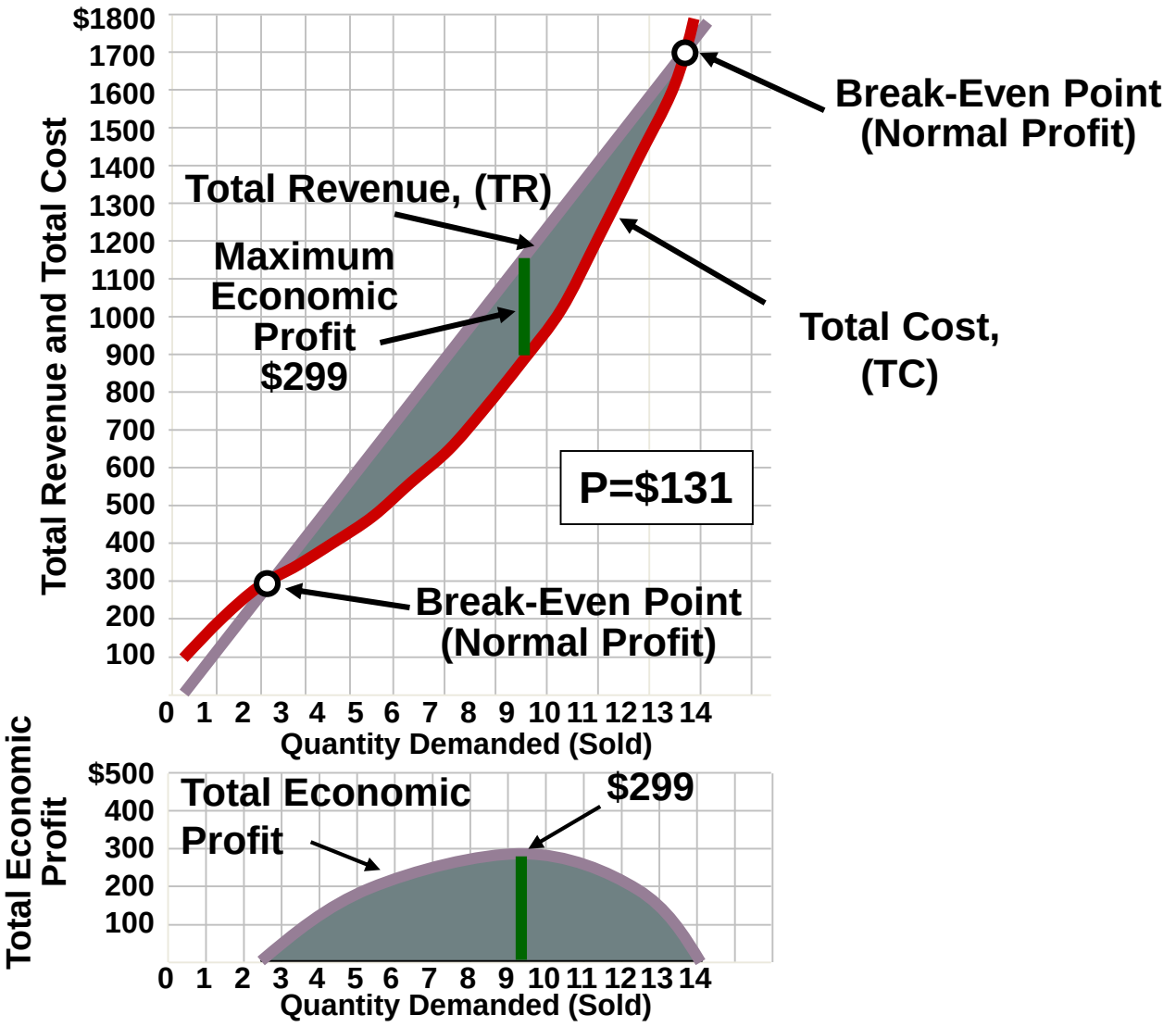
- Three questions:
  - Should the firm produce?
  - If so, what amount?
  - What economic profit (loss) will be realized?

Profit Maximization: TR–TC Approach

The Profit-Maximizing Output for a Purely Competitive Firm: Total Revenue – Total Cost Approach (Price = $131)

(1) Total Product (Output) (Q)	(2) Total Fixed Cost (TFC)	(3) Total Variable Costs (TVC)	(4) Total Cost (TC)	(5) Total Revenue (TR)	(6) Profit (+) or Loss (-)
0	$100	$0	$100	$0	$-100
1	100	90	190	131	-59
2	100	170	270	262	-8
3	100	240	340	393	+53
4	100	300	400	524	+124
5	100	370	470	655	+185
6	100	450	550	786	+236
7	100	540	640	917	+277
8	100	650	750	1048	+298
9	100	780	**880**	**1179**	+**299**
10	100	930	1030	1310	+280

Profit Maximization: TR–TC Approach

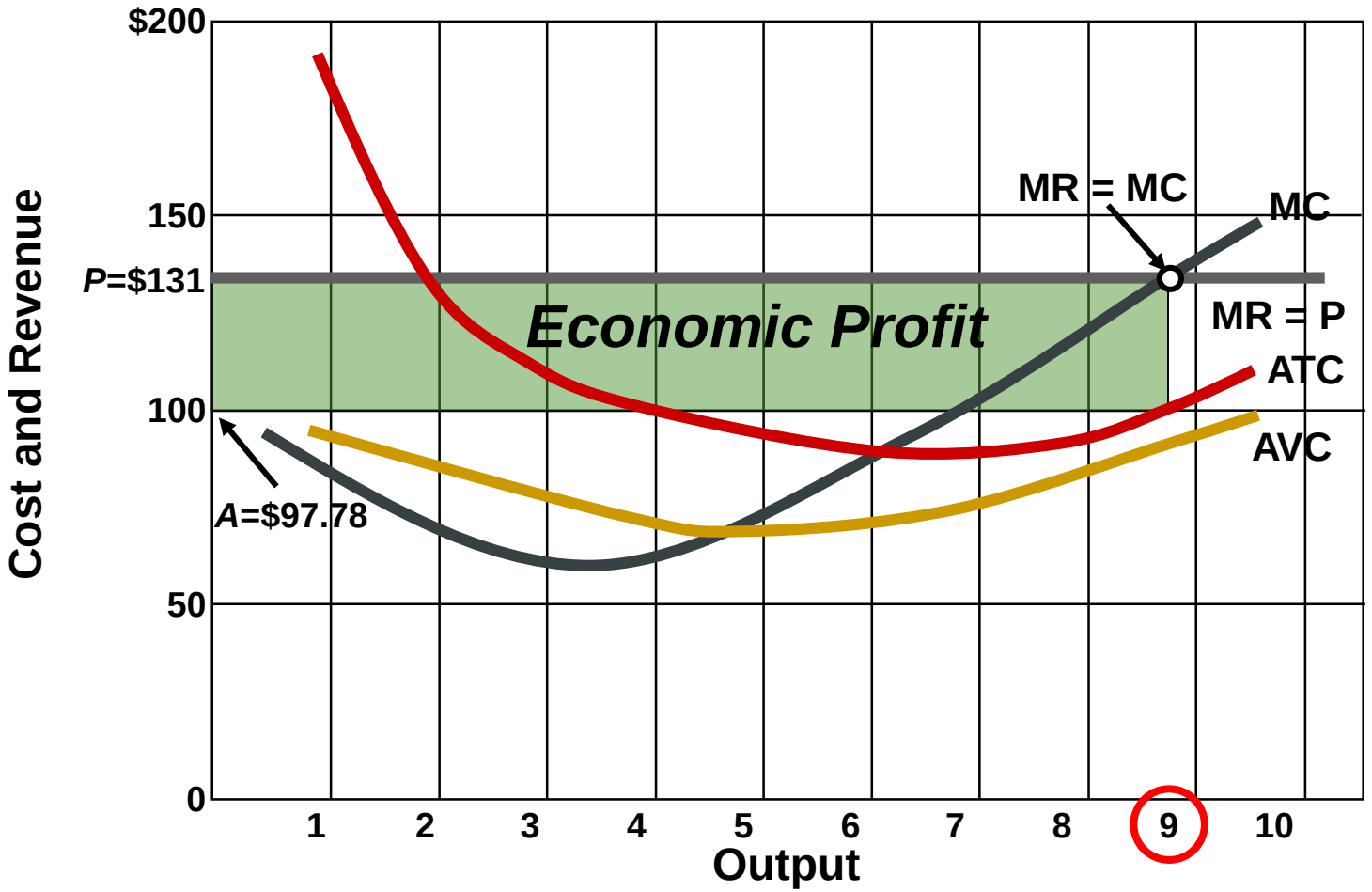


Profit Maximization: MR-MC Approach

The Profit-Maximizing Output for a Purely Competitive Firm: Marginal Revenue – Marginal Cost Approach (Price = $131)

(1) Total Product (Output)	(2) Average Fixed Cost (AFC)	(3) Average Variable Costs (AVC)	(4) Average Total Cost (ATC)	(5) Marginal Cost (MC)	(5) Price = Marginal Revenue (MR)	(6) Total Economic Profit (+) or Loss (-)
0						$-100
1	$100.00	$90.00	$190	$90	$131	-59
2	50.00	85.00	135	80	131	-8
3	33.33	80.00	113.33	70	131	+53
4	25.00	75.00	100.00	60	131	+124
5	20.00	74.00	94.00	70	131	+185
6	16.67	75.00	91.67	80	131	+236
7	14.29	77.14	91.43	90	131	+277
8	12.50	81.25	93.75	110	131	+298
9	11.11	86.67	**97.78**	**130**	**131**	+**299**
10	10.00	93.00	103.00	150	131	+280

Profit Maximization: MR-MC Approach



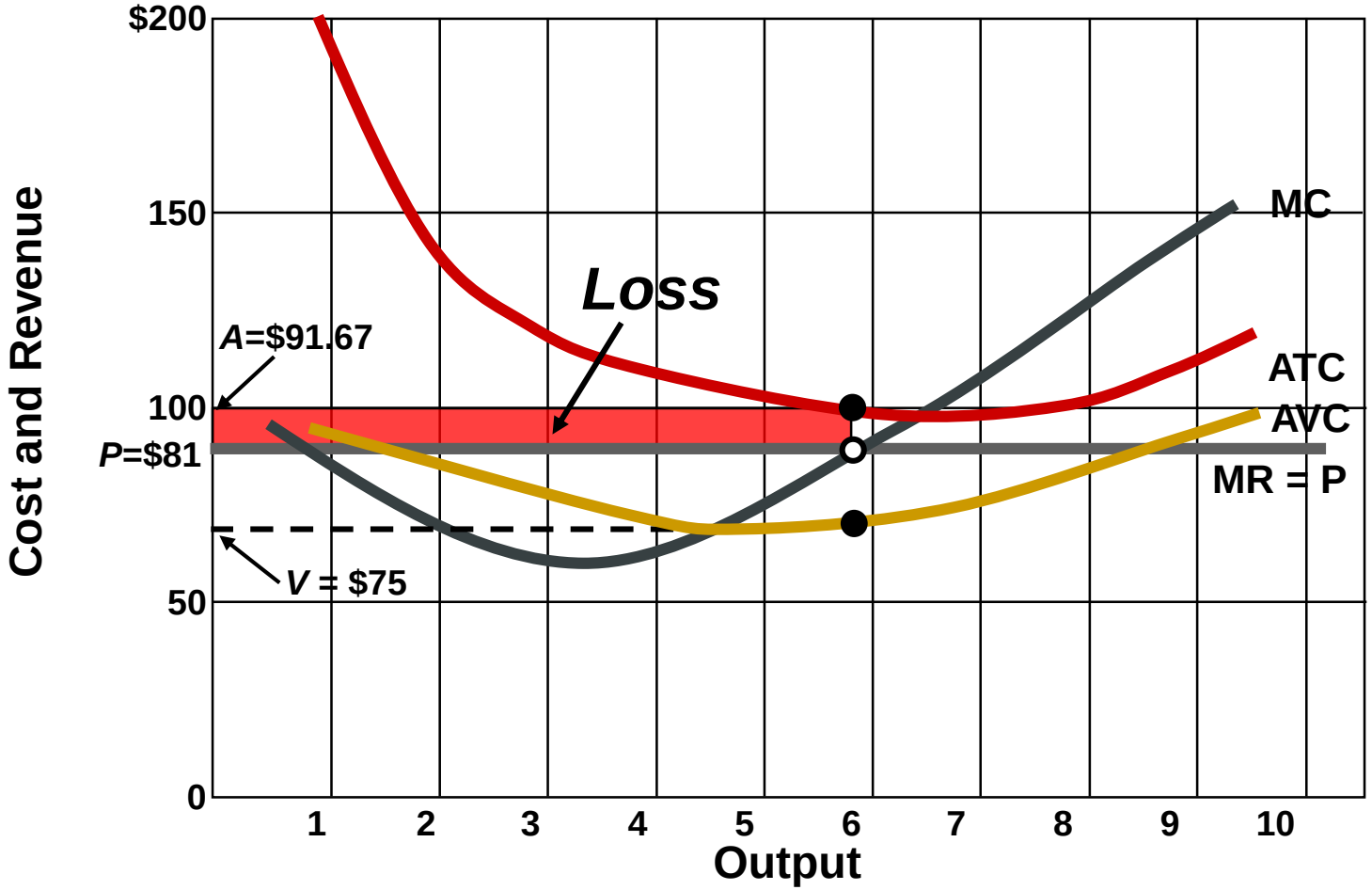
Loss-Minimizing Case

(1) Total Product (Output)	(2) Average Fixed Cost (AFC)	(3) Average Variable Cost (AVC)	(4) Average Total Cost (ATC)	(5) Marginal Cost (MC)	Loss-Minimizing Case: (6) $81 Price = Marginal Revenue (MR)	Loss-Minimizing Case: (7) Profit (+) or Loss (–), $81 Price	Shutdown Case: (8) $71 Price = Marginal Revenue (MR)	Shutdown Case: (9) Profit (+) or Loss (–), $71 Price
0				$ 90	$81	$–100	$71	$–100
1	$100.00	$90.00	$190.00	80	81	–109	71	–119
2	50.00	85.00	135.00	70	81	–108	71	–128
3	33.33	80.00	113.33	60	81	–97	71	–127
4	25.00	75.00	100.00	70	81	–76	71	–116
5	20.00	74.00	94.00	80	81	–65	71	–115
6	**16.67**	**75.00**	**91.67**	90	81	**–64**	71	–124
7	14.29	77.14	91.43	110	81	–73	71	–143
8	12.50	81.25	93.75	130	81	–102	71	–182
9	11.11	86.67	97.78	150	81	–151	71	–241
10	10.00	93.00	103.00			–220		–320

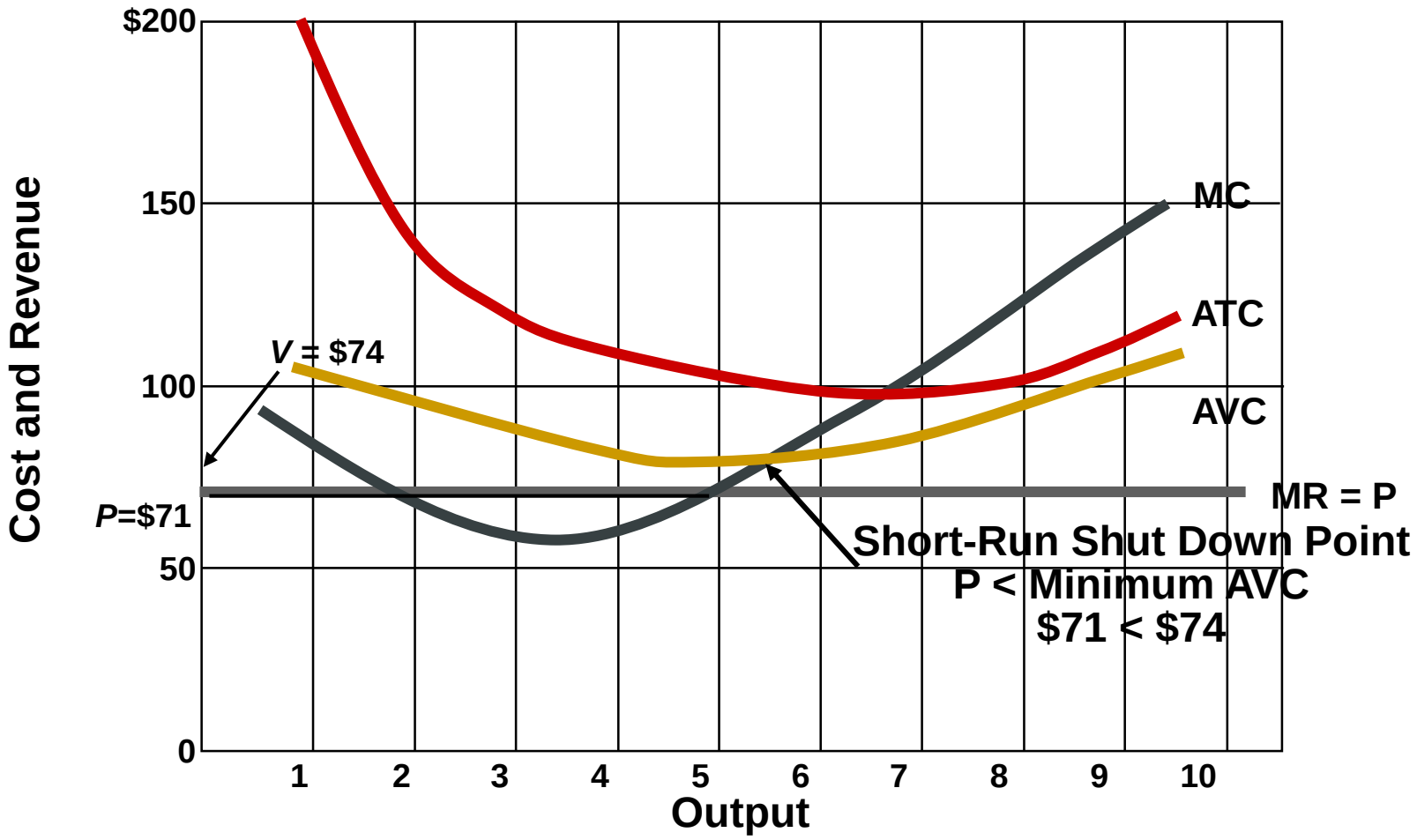
Loss-Minimizing Case

- Loss minimization
  - Still produce because P > minAVC
  - Losses at a minimum where MR=MC

Loss-Minimizing Case



Shutdown Case



Three Production Questions

Output Determination in Pure Competition in the Short Run	
Question	**Answer**
Should this firm produce?	Yes, if price is equal to, or greater than, minimum average variable cost. This means that the firm is profitable or that its losses are less than its fixed cost.
What quantity should this firm produce?	Produce where MR (=P) = MC; there, profit is maximized (TR exceeds TC by a maximum amount) or loss is minimized.
Will production result in economic profit?	Yes, if price exceeds average total cost (TR will exceed TC). No, if average total cost exceeds price (TC will exceed TR).