



The only way up the mountain

One seller faces the whole market: it sets $MR = MC$, then charges what demand allows.

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Monopoly

the market type

- **One seller** · no close substitute · protected by a **barrier to entry**
- Barriers → **natural monopoly** (huge fixed cost: a 2nd cable line never pays back) · **legal** (license, patent, grant) · **network effects** (more users ⇒ more useful)
- Faces the **whole market demand** ⇒ downward slope · more rides only by a lower price · $\$30 \Rightarrow 500$ rides · $\$20 \Rightarrow 1,000$
- Not a price taker · but not "no reaction": at a high price some riders walk or drive

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Marginal revenue

MR below price

- **MR** = extra revenue from 1 more ride · a lower price applies to every rider
- $700 \rightarrow 750$ rides: price $\$26 \rightarrow \25 · gain $50 \times \$25 = \$1,250$ · lose $700 \times \$1 = \$700 \Rightarrow$ net $\$550 \Rightarrow MR = \11 a ride
- Demand $P = 40 - 0.02Q$ · $MR = 40 - 0.04Q \Rightarrow$ same $\$40$ start, **twice the slope**, $MR = 0$ at half of demand's quantity

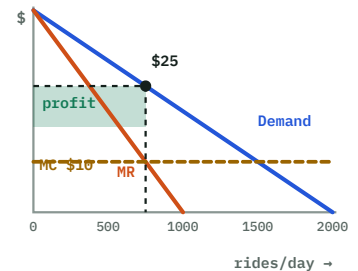
rides	500	1,000	1,500
price	\$30	\$20	\$10
MR	\$20	\$0	-\$20

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Best quantity, price, profit

$MR = MC$

- **Rule** → sell every ride whose $MR > MC$ · stop at $MR = MC$ · then go **up to demand** for the price
- $MC = \$10$: $40 - 0.04Q = 10 \Rightarrow 750$ rides · $P = 40 - 0.02 \times 750 = \25 (not $\$10$, not MR)
- **Profit** = $(P - ATC) \times Q$ · $ATC = 5,250 \div Q + 10 = \17 at $750 \Rightarrow (25 - 17) \times 750 = \$6,000$ · profit lasts while barriers keep rivals out



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Shocks

practice cases

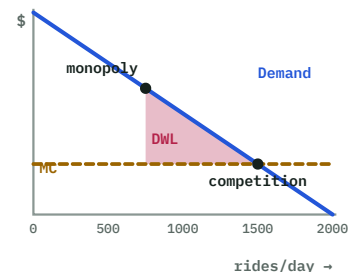
- **MC** ↑ $\$10 \rightarrow \$16 \Rightarrow MR = MC$ at **600** rides · price **$\$28$** ⇒ fewer rides, higher price
- **Demand** ↑ $P = 50 - 0.02Q \Rightarrow MR = MC$ at **1,000** rides · price **$\$30$** ⇒ both up
- **Fixed fee** + $\$1,000$ a day ⇒ profit $-\$1,000$ in every row (700 : $\$4,950$ · 750 : **$\$5,000$** · 800 : $\$4,950$) ⇒ **best quantity unchanged**
- Fixed cost moves profit, never MR or MC , so never the best quantity

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Against competition

deadweight loss

- Competition: $P = MC = \$10$ · **1,500** rides · monopoly: $\$25 \cdot 750$ rides ⇒ higher price, fewer rides
- **DWL** (deadweight loss) = surplus lost, kept by nobody = $\frac{1}{2} \times 750 \times (\$25 - \$10) = \$5,625$
- **Price cap** $\$20$ (transfer case) ⇒ sells up to demand at $\$20 = 1,000$ rides ⇒ $DWL \frac{1}{2} \times 500 \times \$10 = \$2,500$ · profit $(20 - 15.25) \times 1,000 = \$4,750$



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Regulation

+ price discrimination

- $P = MC$ ($\$10$) ⇒ no DWL but loss = fixed cost $\$5,250 \Rightarrow$ needs a subsidy · $P = ATC$ (fair return) ⇒ break even, between the two prices
- **Price discrimination** → same ride, different price by willingness to pay · needs a **barrier** (no resale)
- Tourists $\$22 \times 300$ + locals $\$16 \times 300 = \$11,400$ · two tickets $500 \times \$30 + 500 \times \$20 = \$25,000$ vs one price $\$25 \Rightarrow 750 \times \$25 = \$18,750 \Rightarrow$ profit $\$9,750$ vs $\$6,000$
- **Perfect** discrimination → each pays their maximum ⇒ all consumer surplus to the firm · **1,500** rides ⇒ **no DWL**
- Price comes from demand, not from MR · MR only tells where to stop