Rival Logic

WITSOOTH · CLEVER TRUTH

AP MICROECONOMICS · UNIT 4.5

Name _____ Period _____

DRIVING QUESTION

Two rival companies would both make MORE money if they just cooperated. So why do they usually compete themselves into smaller profits instead?

Gut instinct now. Answer it again at the end using Nash equilibrium.

BEFORE THE GAME

Two gas stations sit across the street from each other. Both would earn more if they quietly kept prices high. Instead one drops its price, the other matches, and both earn less than if neither had moved.

Your gut answer — if both stations would profit more by keeping prices high, why does one of them break first?

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Quick prediction — without a formal agreement, can two rivals actually trust each other to hold prices high?

☐ Yes ☐ No

_____

DURING THE GAME — READ THE MATRIX

RD	GD DOMINANT STRATEGY?	RIVAL DOMINANT STRATEGY?	NASH EQUILIBRIUM CELL	FINAL CALL	PD OR COORDINATION?
1					☐ PD ☐ Coord.
2					☐ PD ☐ Coord.
3					☐ PD ☐ Coord.
4					☐ PD ☐ Coord.
5					☐ PD ☐ Coord.

A dominant strategy is best regardless of what the rival does. Nash equilibrium = the cell neither side wants to unilaterally leave. PD = prisoner's dilemma (cooperation beats Nash, but isn't stable).

AFTER THE GAME

Find a prisoner's-dilemma round. What was the mutually cooperative outcome, and why couldn't both sides actually land there?

Now use the vocabulary: define Nash equilibrium in one sentence. Is it always the outcome that maximizes total profit for both sides?

TRANSFER — NOW APPLY IT

Breaking: "Airlines Add Fees Nobody Wanted, Say They Can't Stop"

Every major airline charges a baggage fee, and surveys show fliers hate them. But if Airline A drops its fee alone, it loses guaranteed revenue on every passenger while winning only a handful of fee-averse fliers from Airline B — which faces identical math. So both keep charging, even though industry goodwill (and maybe revenue) would be higher if the fee vanished for everyone at once.

A. What is each airline's dominant strategy regarding fees? Explain why dropping the fee unilaterally is worse than keeping it, regardless of what the rival does.

B. What's the Nash equilibrium here? Is it necessarily the outcome that's best for the industry as a whole?

C. Compare it to a round from the game — which one had this same "trapped by rational self-interest" structure?

RETURN TO THE DRIVING QUESTION

Two rival companies would both make MORE money if they just cooperated. So why do they usually compete themselves into smaller profits instead?

Use dominant strategy and Nash equilibrium in your final answer.