The Ultimate AP® Macroeconomics Unit 1 Cheat Sheet

1.1 Scarcity & Economic Systems

Core Ideas

Scarcity: unlimited wants, limited resources → every society must choose what, how & for whom to produce.
Economics = study of choices under scarcity. **Micro** = individuals, households & firms in single markets; **macro** = whole economy (GDP, inflation, unemployment, growth).
Positive statement = testable fact ("unemployment is 4%").
Normative = opinion w/ "should" ("taxes should fall").

Factors of Production

Factor	Example	Payment
Land	Oil, soil, water	Rent
Labor	Workers' effort	Wages
Capital	Tools, factories	Interest
Entrepreneurship	Risk-taking	Profit

Capital = human-made tools used to make goods, NOT money. **Human capital** = skills & education.

Economic Systems

Market: prices & private choices answer what/how/for whom. **Command**: central govt planners decide all 3. **Mixed**: both (all real economies, e.g., the U.S.).
Traditional economy: custom decides. Market systems rely on **private property** & the **price system**.
Circular flow: households sell factors → firms; firms sell goods → households; money flows the opposite way.

Thinking at the Margin

Marginal analysis: do 1 more unit if **MB ≥ MC**; stop where MB = MC. Sunk costs don't count in the choice.
Incentives: people respond to costs & benefits (price ↑ → buyers buy less, sellers offer more for sale).

⚠ "Money" is NOT a factor of production. Capital = physical tools, machinery, equipment & factories.

✓ MCQ: "should" or value words → normative. Testable data or cause-effect claims → positive statement.

1.2 Opportunity Cost & the PPC

Opportunity Cost

Opportunity cost = value of the next-best alternative given up. Not all options, just the next best.
Trade-off = choosing more of 1 thing means less of another.
Free goods are rare: time & resources always cost.

Production Possibilities Curve (PPC)

PPC = max combos of 2 goods w/ all resources fully & efficiently used & technology held fixed (constant).

Point	Meaning
On the curve	Efficient (full use)
Inside	Inefficient / unemployment
Outside	Unattainable now

Productive efficiency = any point ON the PPC. **Allocative efficiency** = the point society wants most (MB = MC).

Shape of the PPC

Bowed out (concave): **increasing opportunity cost** b/c resources are specialized (not equally good at both).
Straight line: **constant opportunity cost** b/c resources are perfectly adaptable between the 2 goods (same OC).
Law of increasing OC: each extra unit of X costs MORE Y b/c you shift in resources less suited to X.
Slope = opportunity cost of the good on the x-axis (in units of the y-axis good); steeper = higher OC.

Calculating OC on a PPC

Example: move from (10 pizza, 20 robots) to (14 pizza, 12 robots) → 4 pizza cost 8 robots → OC of 1 pizza = **2 robots**.
Constant OC: (0, 30) → (10, 20) → (20, 10): each 10 X costs 10 Y → OC of 1 X = 1 Y every time → straight-line PPC.

⚠ OC = what you GIVE UP divided by what you GAIN. Don't flip it; check the units of your answer.

✓ FRQ: label both axes w/ the 2 goods & draw a bowed-out PPC unless the prompt says OC is constant.

1.2 PPC Shifts & Economic Growth

What Shifts the PPC

Change	PPC Effect
More resources	Shift out
Better technology	Shift out
More human capital	Shift out
War, disaster	Shift in
Tech for 1 good	Pivot on 1 axis

Economic growth = outward shift of the PPC (↑ productive capacity), from more or better resources.
Pivot: new tech in only 1 good → curve stretches out on that good's axis only; the other intercept stays put.
More labor (immigration, pop. growth) or **more capital** (new factories, machines) → the whole PPC shifts out.

Moves vs. Shifts

Recession / unemployment → point moves INSIDE the PPC; the curve itself does NOT shift (resources still exist).
Returning to full employment = point moves back out to the curve; that's recovery, not economic growth.

Capital vs. Consumer Goods

More capital goods today (factories, machines) → fewer consumer goods now, but PPC shifts out MORE in the future.
More consumer goods today → higher living standard now, but slower outward growth of the PPC in the future.

PPC & Trade

Trade lets a country CONSUME beyond its PPC, but it doesn't shift the PPC (production limit unchanged).

⚠ Unemployment = point inside PPC, NOT a leftward shift. Only lost resources shift the curve in toward the origin.

⚠ A shift in requires resources to be destroyed or lost (war, disaster, emigration), not just sitting idle for a while.

✓ FRQ: when asked about growth, draw the NEW PPC outside the old one & label both curves.

1.3 Comparative Advantage & Trade

Key Definitions

Absolute advantage: can produce MORE w/ the same resources (or the same amount w/ fewer resources or hours).
Comparative advantage: produces at LOWER opportunity cost. Trade is based on this, not absolute advantage.
Specialization: each country makes the good w/ the lower OC → total world output ↑ → both countries can gain.

Worked Example (Output)

Per worker	Wheat	Cloth
U.S.	10	5
Mexico	6	6

U.S.: 1 cloth = 10/5 = **2 wheat**; 1 wheat = 0.5 cloth. **Mexico**: 1 cloth = **1 wheat**; 1 wheat = 1 cloth. OCs are reciprocals.
Result: U.S. has CA in **wheat** (0.5 < 1 cloth); Mexico has CA in **cloth** (1 < 2 wheat). U.S. has absolute advantage in wheat only; Mexico has it in cloth (6 > 5 per worker).

Output vs. Input Problems

Output (units produced): "**Other Over**" → OC of good X = other good ÷ X (e.g., 5 cloth ÷ 10 wheat).
Input (hours/workers needed): "**IOU**" (Input: Other Under) → OC of X = X's input ÷ other good's input.
Input example: 2 hrs/shirt, 4 hrs/hat → OC of 1 shirt = 2 ÷ 4 = **0.5 hat**; OC of 1 hat = 4 ÷ 2 = 2 shirts (reciprocal).

Terms of Trade

Mutually beneficial terms lie BETWEEN the 2 countries' OCs. Here: 1 cloth for 1–2 wheat (e.g., 1.5 wheat).
Gains from trade: after specializing & trading, both countries can consume at points outside their own PPCs.

⚠ A country can have absolute advantage in both goods but comparative advantage in only 1.

✓ Always compute BOTH countries' OC for BOTH goods before answering any comparative advantage question.

1.4 Demand

Law of Demand

Law of demand: price ↑ → quantity demanded ↓ (inverse relationship) → downward-sloping D curve.
Why: **substitution effect** (switch to cheaper goods), **income effect** (less buying power), **diminishing marginal utility**.
Demand schedule = table of P & Qd. **Market demand** = sum of all individual buyers' Qd at each possible price.

Shift vs. Movement

Change in quantity demanded = movement ALONG the curve, caused ONLY by the good's own price.
Change in demand = SHIFT of the whole curve (right = ↑, left = ↓), caused by a determinant change.

Determinants of Demand (TRIBE)

Determinant	Example (D shifts)
Tastes	Trend → D ↑
Related goods	Sub price ↑ → D ↑
Income	Normal good: ↑ → D ↑
Buyers (number)	Pop. ↑ → D ↑
Expectations	Future price ↑ → D ↑

Substitutes (Coke/Pepsi): price of 1 ↑ → demand for other ↑.
Complements (cars/gas): price of 1 ↑ → demand for other ↓.
Example: coffee price ↑ → demand for cream (complement) shifts left ↓ & demand for tea (substitute) shifts right ↑.
Normal good: income ↑ → D ↑. **Inferior good**: income ↑ → D ↓ (e.g., bus rides, instant noodles, used cars).
Example: recession → incomes ↓ → D for normal goods (restaurants) ↓, D for inferior goods (store brands) ↑.

⚠ A good's OWN price never shifts its demand curve; it only causes a movement along it (change in Qd).

✓ FRQ: say "demand increases" (shift) vs. "quantity demanded increases" (movement) precisely.

1.5 Supply

Law of Supply

Law of supply: price ↑ → quantity supplied ↑ (direct relationship) → upward-sloping S curve for the good.
Why: higher price → more profit → firms produce more; it covers the rising marginal cost of extra output.
Market supply = sum of all firms' Qs at each price.

Shift vs. Movement

Change in quantity supplied = movement along S, caused only by a change in the good's own price.
Change in supply = shift of the whole S curve: right = ↑ supply (more at every price), left = ↓ supply.

Determinants of Supply (ROTTEN)

Determinant	Example (S shifts)
Resource costs	Wages ↑ → S ↓
Other goods' prices	Alt. crop price ↑ → S ↓
Taxes / subsidies	Tax → S ↓; subsidy → S ↑
Technology	Better tech → S ↑
Expectations	Future price ↑ → S ↓ now
Number of sellers	More firms → S ↑

Input costs are the most-tested shifter: wages, materials or energy costs ↑ → S shifts LEFT (supply ↓).
Tech example: cheaper solar-panel production → S of panels shifts right ↑ → P ↓, Q ↑ in the panel market.
Weather / disasters affect resource availability → e.g., a drought destroys crops → S ↓ (shifts left).
Subsidy = govt payment to producers → lowers costs → S ↑.
Excise tax raises costs per unit sold → S ↓.
Expectations trap: if firms expect higher prices later, they hold goods back → supply ↓ today (S left).

⚠ "Increase in supply" = shift RIGHT, even though the new curve looks lower on the graph than the old one.

✓ Ask: does this change the cost or ability to produce? → shift S. Change in buyers' wants? → shift D.

1.6 Market Equilibrium

Equilibrium & Disequilibrium

Equilibrium: Qd = Qs at the equilibrium price (**P***) → no pressure to change; the market clears w/ no excess.
Shortage (excess demand): price below P* → Qd > Qs → buyers compete → price rises toward equilibrium.
Surplus (excess supply): price above P* → Qs > Qd → unsold goods pile up → price falls toward equilibrium.

Single Shifts

Shift	Price	Quantity
D ↑	↑	↑
D ↓	↓	↓
S ↑	↓	↑
S ↓	↑	↓

Double Shifts

Shifts	Price	Quantity
D ↑, S ↑	?	↑
D ↓, S ↓	?	↓
D ↑, S ↓	↑	?
D ↓, S ↑	↓	?

Double shift rule: 1 variable is certain, the other is **indeterminate** (depends on which shift is bigger).
Shortcut: if D & S move the same way, Q is certain; if they move opposite ways, P is certain. Other = ?
Example: a freeze destroys the Florida orange crop → S of oranges ↓ → P ↑, Q ↓; buyers switch to apples (a substitute) → D for apples ↑ → P & Q of apples both ↑.
Prices as signals: rising P tells firms to produce more & tells buyers to conserve or switch to substitutes.

⚠ After a D shift, supply does NOT shift: only quantity supplied changes (a movement along the S curve).

✓ Explain the mechanism: "shortage at old price → price rises → Qs ↑, Qd ↓ until new equilibrium."

Graphs & FRQ Moves

Graphing Rules

Label everything: axes (P and Q, or 2 goods), curves (D, S, PPC), original & new equilibrium (P_1, Q_1 → P_2, Q_2).
Arrows show the direction of each shift; draw dashed lines from each equilibrium point to both axes.
Correctly labeled graph earns its own point, separate from the written explanation of what happens to P & Q.
Match graph & words: your written explanation must agree w/ what you drew on the graph, or you lose both.

FRQ Task Verbs

Verb	Do This
Identify	State answer, no explanation
Explain	Give the cause–effect chain
Calculate	Show work & units
Draw	Correctly labeled graph
Show	Mark it on your graph

Common Unit 1 Traps

Shift vs. movement: own price = movement along the curve; any other determinant = shift of the whole curve.
OC direction: give up ÷ gain. Check by asking "how much of Y do I lose for each 1 X I gain?" every time.
Absolute ≠ comparative: specialize by lowest opportunity cost, not by highest output per worker or hour.
Ceteris paribus = all else held constant; change only 1 variable at a time in your analysis & your graph.
Directional answers: say increase, decrease or no change; "it changes" or "it's affected" earns nothing.

⚠ Mislabeled axes or unlabeled curves = lost points, even if the logic is right; label P, Q, D, S & the PPC.

✓ Four-function calculator allowed, but show the setup so graders can follow your work on calculations.