

Syllogism

~ Reasoning · SSC Exams ~



← circled = key tricks!

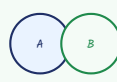


A **syllogism** gives 2-3 statements (always taken as true) and some conclusions — you must decide which conclusions **definitely follow**, using the statements only — never outside/real-world knowledge.

① The Four Basic Statement Types ☺☺



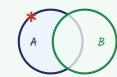
All A is B
every A lies inside B



No A is B
A and B never meet



Some A is B
at least 1 A is also B



Some A is not B
* part of A stays outside B

Worked example — translate to a Venn diagram

Statement: “All cats are animals.”

Step 1 — type = All A is B (A=cats, B=animals).

Step 2 — draw the cats-circle fully **inside** the animals-circle.

Answer → every cat is guaranteed an animal. ✓



“Some” means **at least one** — possibly all! Don't assume “some” secretly means “not all” — that's the #1 SSC trap.

② The Venn Diagram Method

Rule

For every statement (especially “Some” ones) draw **every possible diagram** it allows. A conclusion “follows” only if it stays true in **ALL** of those diagrams — not just one.

Some A is B — the 3 possible pictures



partial overlap



all A is B too



all B is A too

∴ from “Some A is B” alone you can **only** be sure of the overlap — nothing more.

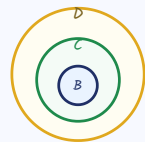
Worked example — chaining through a common term

Statements: **All B is C. All C is D.**

Step 1 — draw B inside C (common term C is the bridge).

Step 2 — draw C inside D → B, being inside C, lands inside D too.

Answer → **All B is D** follows in every diagram. 



When two statements share a term, always merge diagrams through that shared term — it's the bridge that carries the relationship across.



If a statement (like “Some”) has multiple pictures, redo the merge for **each** picture before trusting a conclusion.

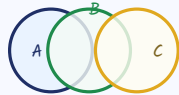
③ Definite vs Possible Conclusions ✓?

Rule

A conclusion is **definite** (“follows”) only if it is true in **every** possible diagram. If it's true in some diagrams but false in others, it's merely **possible** — and does NOT follow.

Worked example – the classic “Some + Some” trap

Statements: **Some A is B. Some B is C.** Conclusion tested: **Some A is C.**



here “Some A is C” is true



here A and C never touch — false!

Answer → since one valid diagram makes it false, “Some A is C” is only **possible**, not definite — it **does NOT follow**. ✓

Try this – All + Some also fails to be definite

Statements: **All pens are books. Some books are tables.** Conclusion: **Some pens are tables?**

The “some books that are tables” might lie completely outside the pens-circle — so it's only **possible**, **not definite**. ✓



Golden rule → Two “Some” statements never give a guaranteed common conclusion. If you can draw even ONE picture where it's false, the answer is “doesn't follow.”

④ The Either-Or Rule

When “Either I or II follows” is the answer – all 3 conditions:

1 → Neither conclusion follows on its own (both are only “possible”).

2 → Same subject & same predicate in both conclusions.

3 → The two conclusions form an exact **complementary pair**: “All X is Y” ↔ “Some X is not Y”, OR “Some X is Y” ↔ “No X is Y”.

Worked example (classic SSC either-or)

Statements: All rats are cats. Some cats are dogs.

Conclusions: I. Some dogs are rats. II. No dog is a rat.

Step 1 — All+Some (rats→cats→dogs) gives **no definite** link between rats & dogs (page 3 rule).

Step 2 — I (“Some...”) and II (“No...”) are an exact complementary pair, same subject/predicate.

Answer → **Either I or II follows.** 



Try this – the other pair-type (All / Some-not)

All students are readers. Some readers are writers. → I. All students are writers. II. Some students are not writers.

Same trap (All+Some, no definite link) + exact complementary pair → **Either I or II follows.** 



Trap – if the subject/predicate differ between I & II, or if one conclusion already follows definitely, either-or does **NOT** apply.

⑤ Conversion (Immediate Inference) ↔

All A is B ⇒ **Some A is B** follows too (All is a special case of Some)

No A is B ⇒ **No B is A** (fully reversible — symmetric)

Some A is B ⇒ **Some B is A** (fully reversible)

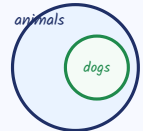
Some A is not B ⇒ cannot be reversed to “Some B is not A” — NOT valid!

Worked example — why “Some...not” can’t reverse

“Some animals are not dogs” is true (e.g. cats are animals, not dogs).

But “Some dogs are not animals” is **false** — every dog IS an animal.

Answer → the reversal broke, so “Some...not” is **never** converted. ✓



Quick conversion checks

“No teacher is a thief” → **No thief is a teacher**



“Some engineers are singers” → **Some singers are engineers** ✓

“All doctors are graduates” → **Some doctors are graduates** ✓

“Some fruits are not sweet” → **no valid reversal** ✗



Conclusions can be conversions too! Students often check only the “obvious” conclusion and miss the converted one hiding in the options.

⑥ Combining Two Statements (Common Term B) $\times^+$

Statement 1 = A-B, Statement 2 = B-C (B is the common/bridge term). Verified with the Venn method:

All A-B + All B-C → **All A-C**

All A-B + No B-C → **No A-C**

Some A-B + All B-C → **Some A-C**

Some A-B + No B-C → **Some A is not C**

All A-B + Some B-C → **no definite conclusion**

No A-B + All B-C → **no definite conclusion**

No A-B + Some B-C → **Some C is not A**

Some A is not B + anything → **usually no conclusion**

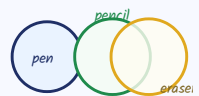
Worked example – “No + Some” (reversed conclusion)

Statements: No pen is a pencil. Some pencils are erasers.

Step 1 — pen & pencil circles never touch.

Step 2 — the erasers that overlap pencils can never be pens (pencils avoid pens entirely).

Answer → **Some erasers are not pens.** ✓



This table is a shortcut – if in doubt, ALWAYS fall back to drawing the actual Venn diagrams (page 2).

⑦ Three-Statement & Multi-Conclusion Sets

Rule

Chain the statements two at a time through shared terms. With an **All-All-All** chain every intermediate & end-to-end conclusion is definite — a common source of multi-mark questions.

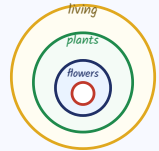
Worked example — a 3-statement chain

Statements: **All roses are flowers. All flowers are plants. All plants are living things.**

Conclusions: I. All roses are plants. II. All flowers are living things. III. All roses are living things.

Step — nest the circles: roses $\subset$ flowers $\subset$ plants $\subset$ living things.

Answer → every pair inside the nest is true — **I, II and III all follow.** 



Try this — a chain that uses conversion too

Statements: All cups are plates. No plate is a spoon. Conclusions: I. No cup is a spoon. II. No spoon is a cup.

All+No = No (I follows); No always reverses (II follows too) → **Both I and II follow.** 



With 3 statements, work in **pairs** (1&2, then result&3) — never try to combine all three in your head at once.

⑧ Common Traps to Avoid ∞

Trap 1 — Never use real-world/general knowledge. If statements say “All flowers are red,” treat it as true even if false in real life.

Trap 2 — “Some” does NOT mean “not all.” “All A is B” automatically makes “Some A is B” true as well.

Trap 3 — “Some...not” can never be reversed (page 5).

Trap 4 — Two particular statements (Some/Some-not) almost never give a guaranteed conclusion.

Trap 5 — Either-or needs the **exact same** subject & predicate in both conclusions — a near-miss pair is NOT either-or.

Worked example – the “forgotten conversion” trap

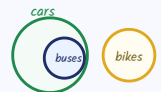
Statements: All buses are cars. No car is a bike.

Conclusions: I. No bus is a bike. II. Some cars are buses.

Step 1 — All+No = No → I follows.

Step 2 — “All buses are cars” ⇒ “Some buses are cars” ⇒ converts to “Some cars are buses” → II also follows!

Answer → students who skip Step 2 wrongly pick “only I” — the real answer is **Both I and II follow.** ✓



Always test EVERY conclusion for a hidden conversion before marking “doesn't follow.”

⑨ Quick Reference Card

4 statement types (one-glance)

All A-B A inside B	No A-B separate circles	Some A-B overlap	Some A not-B crescent exists
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Combination results ($A-B + B-C \rightarrow A-C$)

All+All= All	All+No= No
Some+All= Some	Some+No= Some...not
All+Some= none	No+All= none
No+Some= Some...not (rev.)	Some+Some= none

Conversion cheat

All A-B $\rightarrow$ Some A-B No A-B $\leftrightarrow$ No B-A Some A-B $\leftrightarrow$ Some B-A Some A not-B $\rightarrow$ no reversal

Either-or spotting checklist

☒ both conclusions individually possible-but-not-definite + ☒ same subject/predicate + ☒ complementary pair (All/Some-not OR Some/No)



Keep this page open while practising – every result here is Venn-verified, not just memorised.

How to Attack ANY Syllogism

- 1→ Identify the type of each statement (All/No/Some/Some-not) and find the **common term**.
- 2→ Draw the **most restrictive** diagram first; if a statement has multiple pictures, note all of them.
- 3→ Merge diagrams two statements at a time through the shared term.
- 4→ Test each conclusion: does it hold in **every** valid diagram? If yes → follows.
- 5→ Don't forget to check **converses** of conclusions too (All→Some, No↔No, Some↔Some).
- 6→ If neither conclusion is definite but they're a complementary pair → check the **either-or** rule.



Common exam traps → ignoring real-world contradictions; missing a valid conversion; forcing a conclusion out of two "Some" statements; wrongly reversing "Some...not."

Keyword-to-Type Gallery

"every / each" → All type

"none / never" → No type

"a few / at least one" → Some type

"not all" → Some...not type

complementary pair → try either-or

2 "Some" statements → expect "no conclusion"

Exercise – Statements & Conclusions

Options: (1) Only I follows (2) Only II follows (3) Either I or II follows (4) Neither I nor II follows (5) Both I and II follow.

Answer key on next page.

Q1. All pens are markers. All markers are inks.
I. All pens are inks. II. Some inks are pens.

Q2. Some actors are singers. No singer is a painter.
I. Some actors are not painters. II. No actor is a painter.

Q3. No cups are plates. All plates are spoons.
I. No cups are spoons. II. No spoons are cups.

Q4. All dogs are animals. Some cats are not animals.
I. Some cats are not dogs. II. All cats are dogs.

Q5. All fruits are sweet. Some sweets are not cheap.
I. Some fruits are not cheap. II. All sweets are fruits.

Q6. All keys are locks. Some locks are doors.
I. Some doors are keys. II. No door is a key.

Q7. Some pilots are singers. All singers are dancers.
I. Some pilots are dancers. II. Some dancers are pilots.

Q8. No teachers are students. All students are learners.
I. No teachers are learners. II. Some learners are not teachers.

Q9. All copies are books. No book is a magazine.
I. No copy is a magazine. II. Some magazines are copies.

Q10. Some pens are pencils. Some pencils are erasers.
I. Some pens are erasers. II. All pencils are pens.

Q11. All students are readers. Some readers are writers.
I. All students are writers. II. Some students are not writers.

Q12. All coins are notes. All notes are cash. No cash is a card.
I. All coins are cash. II. No coin is a card.



Draw the Venn diagram for every question before answering – then flip the page to check.



Answer Key

- Q1 → **Both I and II follow** — All+All=All (I); All A-B ⇒ Some A-B ⇒ converts to Some B-A (II).
- Q2 → **Only I follows** — Some+No = Some...not (I). “No actor is painter” is too strong — not guaranteed.
- Q3 → **Neither I nor II follows** — No A-B + All B-C gives no definite A-C link (I fails; II is I's converse so it fails too).
- Q4 → **Only I follows** — since dogs⊂animals, the cats outside “animals” are automatically outside “dogs” too (I). II is far too strong.
- Q5 → **Neither I nor II follows** — the “sweets not cheap” portion may avoid the fruits circle entirely; II is unsupported reversal.
- Q6 → **Either I or II follows** — All+Some (keys→locks→doors) = no definite link; I & II form a Some/No complementary pair.
- Q7 → **Both I and II follow** — Some+All=Some (I); Some always reverses (II).
- Q8 → **Only II follows** — No+All gives no direct A-C link, but the students (all learners, all non-teachers) guarantee “Some learners are not teachers” (II); full “No” (I) is too strong.
- Q9 → **Only I follows** — All+No=No (I). Since copies & magazines are fully disjoint, II (“Some magazines ARE copies”) is false.
- Q10 → **Neither I nor II follows** — Some+Some gives no guaranteed link (I fails); II is an unrelated, unsupported reversal (not a complementary pair with I).
- Q11 → **Either I or II follows** — All+Some = no definite link; I & II form the All/Some-not complementary pair.
- Q12 → **Both I and II follow** — chain coins⊂notes⊂cash gives All coins-cash (I); All+No=No gives No coin-card (II).

5 Golden Rules – final recap

- 1→ Draw **every** possible Venn picture — a conclusion follows only if true in ALL of them.
- 2→ “Some” = at least one, possibly all. “Some...not” never reverses.
- 3→ Two particular (Some/Some-not) statements almost never give a definite conclusion.
- 4→ Either-or needs: not-definite + same subject/predicate + complementary pair.
- 5→ Always re-check conclusions for hidden conversions before ruling them out.

Score yourself

10–12 correct → **excellent**, syllogism is your strength! 6–9 → **good**, revisit pages 2–8. Below 6 → **redo** the “How to Attack” steps on page 10 slowly.

☆ Draw it, don't guess it — the diagram never lies! ☆

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