Paradigm Test Prep

LSAT Conditional Logic Guide

LSAT Conditional Logic Guide
Mastering Conditional Reasoning for the LSAT

Part 1: The Basics

A conditional statement links a trigger (sufficient) condition to a result condition (necessary). Use language to recognize and properly identify the conditions:

Sufficient Condition Indicators	Necessary Condition Indicators
if	then
when/ whenever	only
all / every / any	only if
in order to/ people who	only when
guarantees / ensures	must / necessary / needed
the only*	depends on / requires / relies on
no / none*	
unless/ except/ until/ without*	

Part 2: Diagramming Conditional Statements

To keep track of conditional statements, we use simple diagramming. This is a tool that can help in harder questions but should not be used for every conditional statement. More on this later.

Format

A → B

A = sufficient condition (left of the arrow)
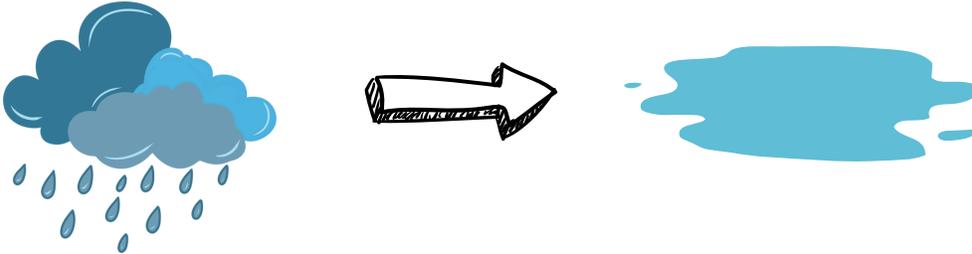B = necessary condition (right of the arrow)

Use arrows (→) and a tilde (~) for negation.

Examples: (showing diagrams and what they signify)

If it rains → The ground gets wet
It rained.
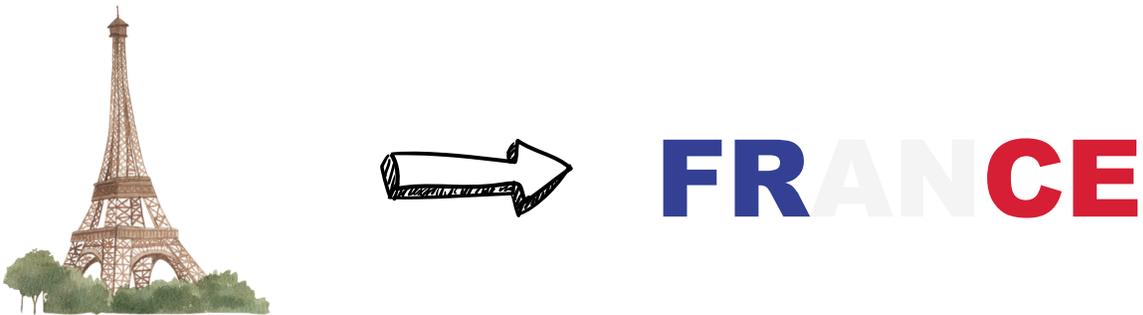Therefore, the ground must be wet.

If you're in Paris → You're in France
Maria is in Paris.
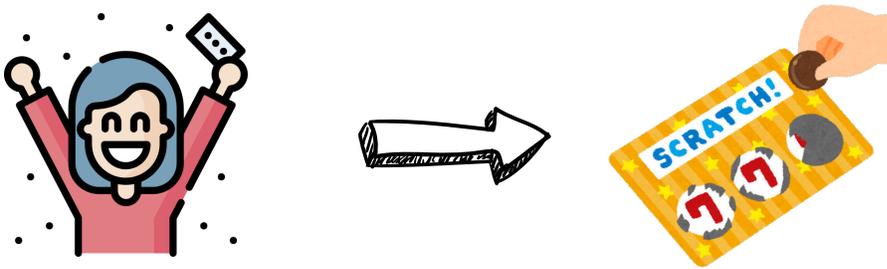Therefore, Maria must be in France.

Part 3: Valid & Invalid Inferences

Valid Inferences

1. Repeat Form

If A → B, and A happens → B must also happen.

Example:

If someone wins the lottery → they bought a ticket.
You win the lottery. Therefore you bought a ticket ✓

2. Contrapositive

Reverse + Negate both sides:

• If A → B, then ~B → ~A

• You didn't buy a lottery ticket, therefore you didn't win.
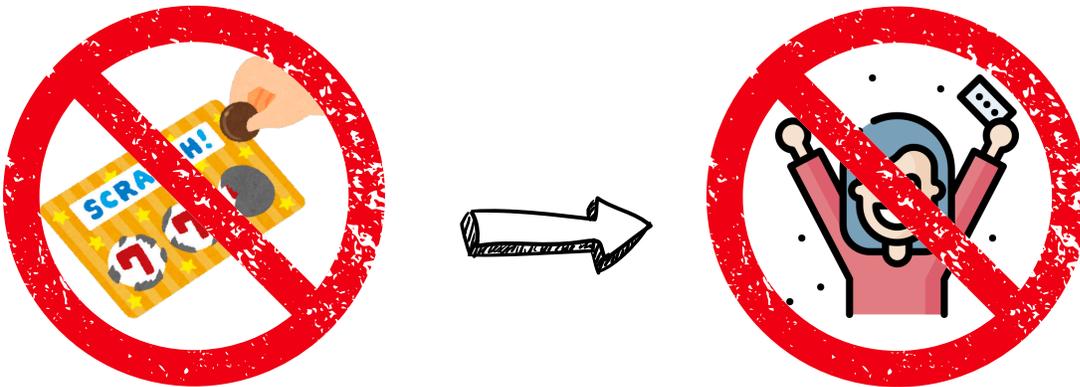
Diagram:

A → B

~B → ~A

<u>Invalid Inferences</u>

1. Mistaken Reversal
Just flipping the order.
• If A → B, don't assume B → A

Example: If it rains → the ground is wet.
Doesn't mean: The ground is wet, therefore it rained ✕
Maybe someone spilled something.
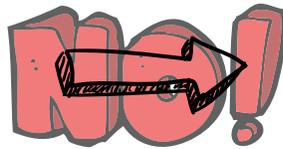
2. Mistaken Negation
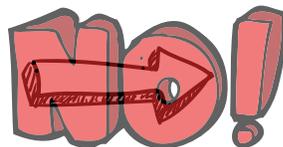Just negating both parts.
• If A → B, don't assume ~A → ~B

Example: If I'm in Paris → I'm in France.
Doesn't mean: I'm not in Paris, therefore I'm not in France ✕
I could be in Nice or Lyon.

Part 4: Linking & Chains

Sometimes you're given multiple conditional statements. You can chain them together if the conditions line up diagonally.

Conditional Chains

A → B
B → C

_____

You can infer A → C
Contrapositive: ~C → ~A

Example

If you study → you learn the material

If you learn the material → you pass

_____

Therefore, If you study → you pass

Protip: When diagramming for inference questions, try to combine conditional statements to draw conclusions. Those conclusions will be your prediction for correct answer. But don't stop there! Once you have a conclusion, take the contrapositive because the correct answer choice could show up in that format.

Part 5: Special Phrases and How to Diagram Them

On the LSAT, certain phrases determine whether a term is treated as a *sufficient* or *necessary* condition. Understanding these will help you diagram statements correctly and avoid common mistakes.

■ 'Only' / 'Only If' vs. 'The Only'

Only / Only If: Introduces the *necessary* condition.
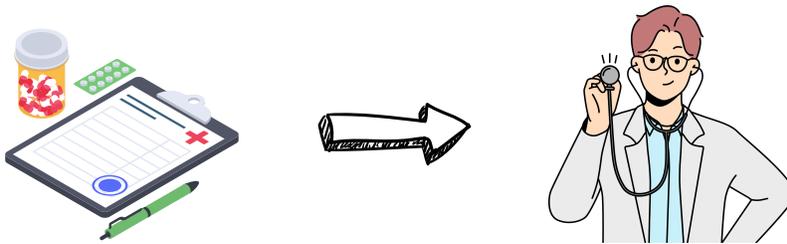Example: A+ only if you study.
Diagram: A+ → Study.

The Only (when starting a sentence): Introduces the *sufficient* condition.
Example: The only person who can prescribe medicine is a doctor.
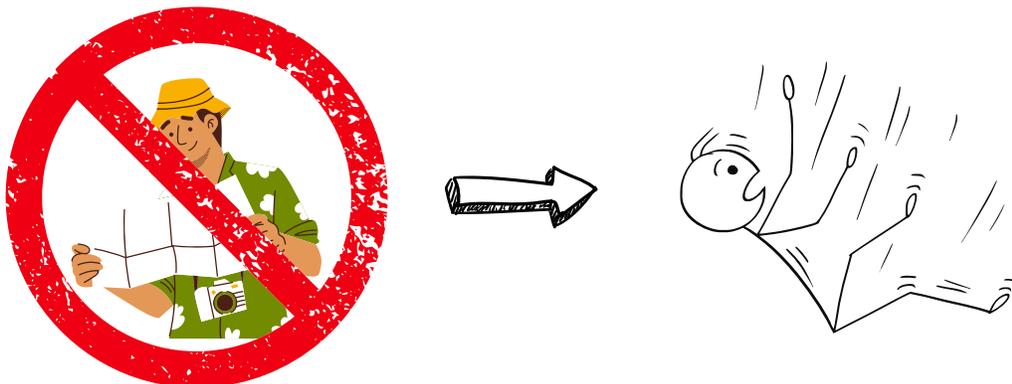Diagram: Prescribe Med → Doctor

■ 'Unless' / 'Except' / 'Until' / 'Without'

Replace these terms with **"if not,"** meaning they introduce the *sufficient condition negated*.

Example: You will trip unless you watch where you are walking.
Translation: If you *don't* watch where you walk, you will trip.
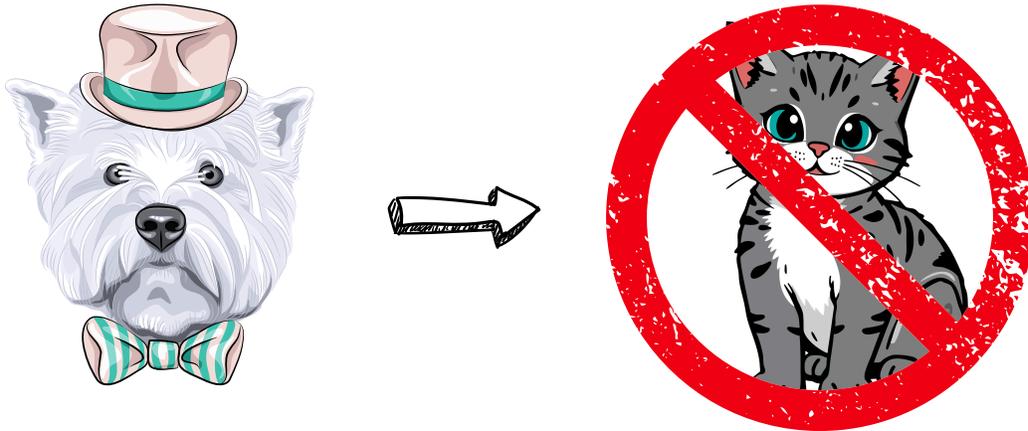Diagram: ~Watch where walk → Trip

◼ 'No' / 'None' / 'No one'

These statements Negate the Necessary condition.

Example: No dogs are cats.
Diagram: Dog → ~Cat

◼ Guarantees/ ensures/ proves/ is sufficient for

This is language of **Sufficiency**. To diagram correctly:

- Ask what is guaranteeing? What is ensuring? What is proving?
- The thing doing the gauranteeing/ensuring/proving is your **sufficient** condition.

Example: Saying "just one more episode" ensures a late bedtime.
Diagram: Say "one more episode" → Late bedtime
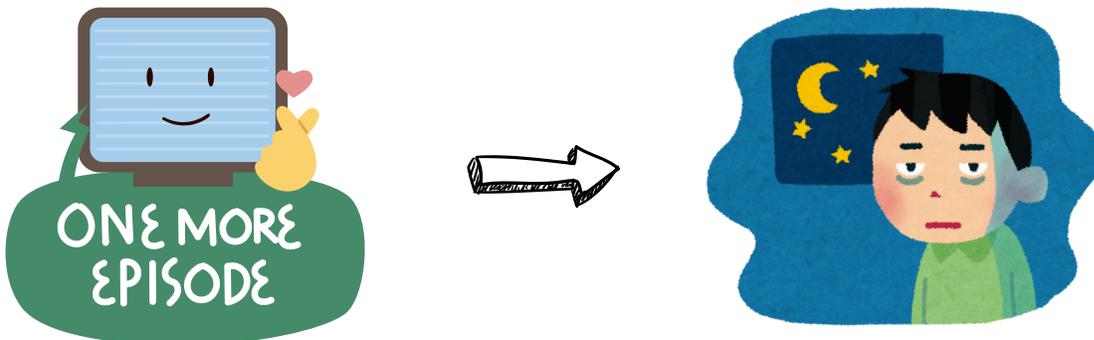
■ Must/ needed/ depends on/ relies on/ required

This is language of **Necessity**. To diagram correctly:

- Ask what must happen? What is needed? What is depended/relied on? What is required?
- The thing that is needed/required/depended on, etc., is your **necessary** condition.

Example: Winning Mario Kart is required for bragging rights in this house.
Diagram: Bragging rights → Win Mario Kart
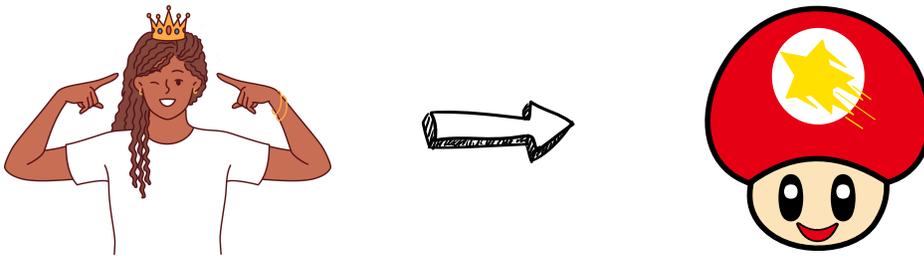
■ Double Arrow Indicators

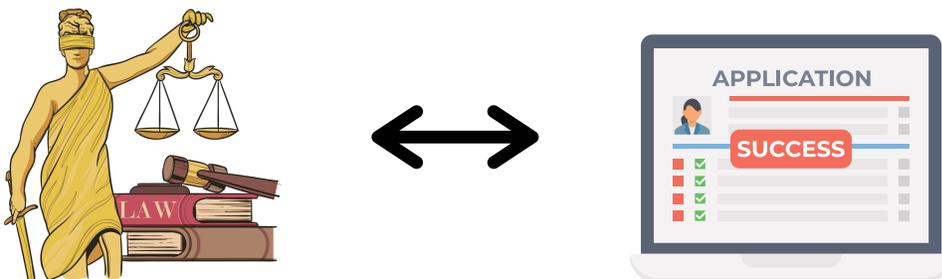The following phrases indicate that both conditions require each other:
- If but only if
- Then and only then
- When and only when

Example: You get into law school if and only if you apply.
Diagram: Law School ↔ apply
In other words, this means: Law school → Apply
                          Apply → Law school
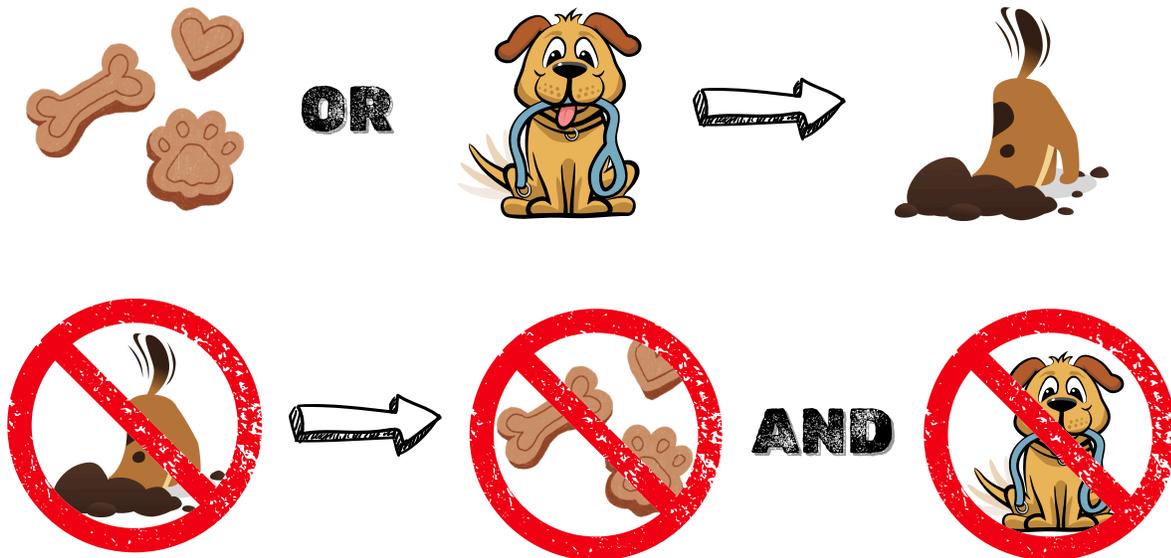
Part 6: Multiple Conditions

Sometimes, conditional statements involve multiple sufficient or multiple necessary conditions. It's important to carefully track whether these conditions are connected by AND or by OR. When taking the **contrapositive** of a conditional statement with multiple conditions, there is a **third step**: switch *and* for *or* / *or* for *and*.

■ Multiple Sufficient Conditions (OR)

If *either* of two or more conditions is enough to guarantee the outcome, use OR when diagramming.

Example: If you give me a treat or take me for a walk, I will wag my tail.
Diagram: Treat OR Walk → Wag tail   Contrapositive: ~Wag tail → ~Treat and ~Walk

■ Multiple Sufficient Conditions (AND)

One condition is NOT enough to guarantee the outcome. Having both condition will guarantee trigger the necessary result. Use AND when diagramming.

Example: If you know the lyrics and hit the high notes, you'll do well at karaoke.
Diagram: Know lyrics and Hit high notes → Do well karaoke
Contrapositive: ~Do well karaoke → ~Know lyrics or ~Hit high notes

■ Multiple Necessary Conditions (OR)

The sufficient condition guarantees the outcome of at least one of the necessary conditions, maybe both.

Example: If you're functioning before 8am, you drank coffee or got enough sleep
Diagram: Functioning before 8am → Drank coffee or Got sleep
Contrapositive: ~Drink coffee and ~Get sleep → ~Functioning before 8am
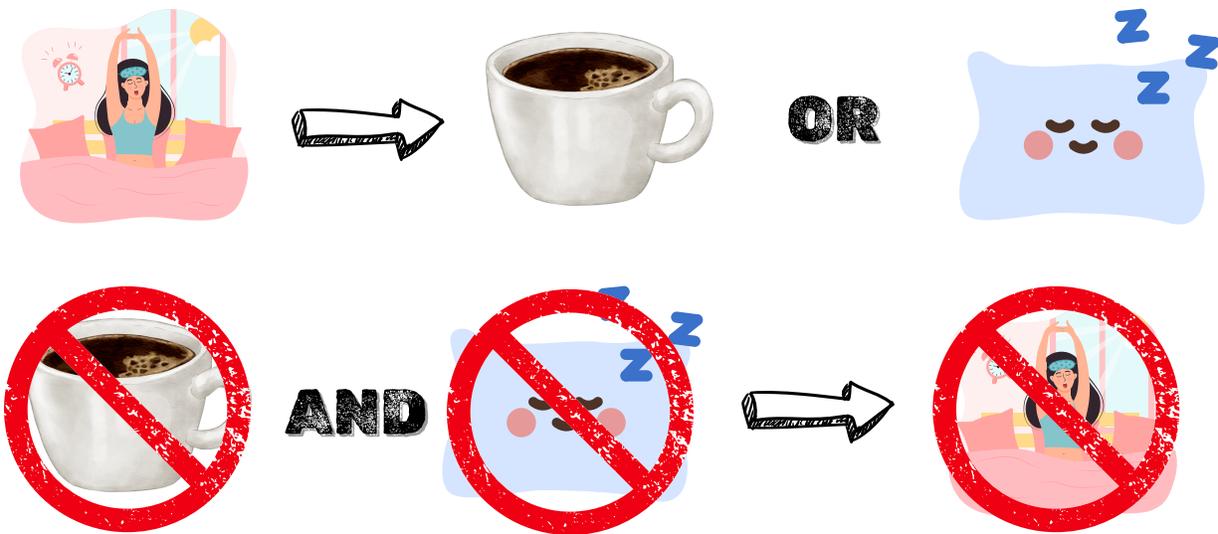
■ Multiple Necessary Conditions (AND)

If all conditions must be true for the outcome to happen, connect them with AND when diagramming.

Example: To unlock level 10, you must beat the boss and survive the lava maze
Diagram: Level 10 → Beat boss AND Survive maze
Contrapositive: ~Beat boss or ~ Survive maze → ~Level 10

◼ Mixed Conditions

Sometimes, you'll have both AND and OR conditions combined. Always focus on what conditions must be met to trigger the result.

Example: If you take the LSAT in combination with strong LORs or a high GPA, you improve your admissions chances.
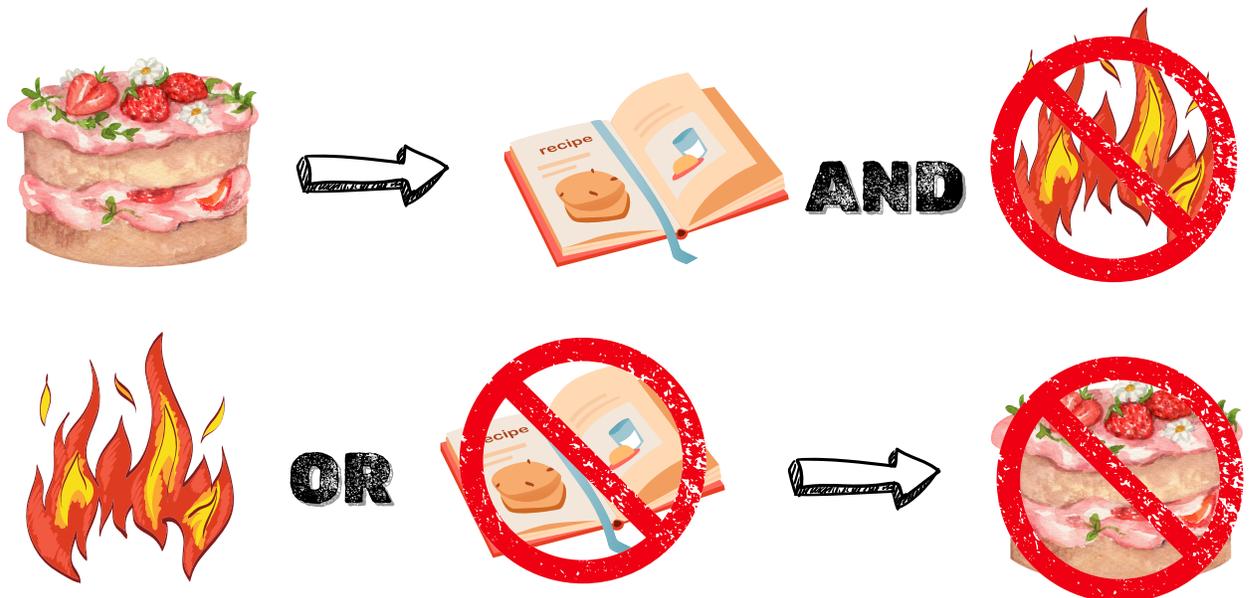Diagram: LSAT AND (LOR OR High GPA) → Better Chances

◼ Taking the Contrapositive with Multiple Conditions

When creating contrapositives, remember these rules:
1. Reverse the order of the terms (Suff/nec)
2. Negate each term (Pos/Neg)
3. Switch AND ↔ OR

Example 1: Good cake → Follow Recipe AND ~ Burn it
Contrapositive: Burn it OR ~Follow Recipe → ~Good Cake

Part 7: On the LSAT

■ Must Be True Questions

When should you diagram? Expect to diagram when your stimulus has <u>multiple conditional statements</u> <u>with repeating variables</u> that allow you to link or chain the statements. Sometimes, taking the contrapositive is required to make an inference. Be suspicious of *mistaken reversals* and *mistaken negations*; they will appear in your answer choices. These questions often reward precision and require recognizing valid vs. invalid inferences.
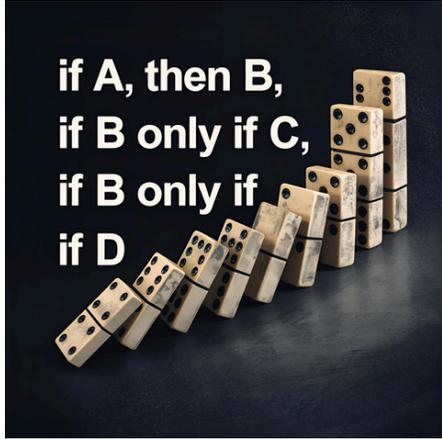
■ Assumption Questions

The need to diagram an Assumption questions is very rare. Think of diagramming as a tool to use only when it will help you get the correct answer faster. Don't expect to diagram unless you see multiple conditional statements in the stimulus that have repeating variables.

Use this structure to understand assumption-based reasoning:

Evidence: $A \rightarrow B$

Assumption: *find the missing connection =* $B \rightarrow C$

_____

Conclusion: $A \rightarrow C$

Protip: The repeating variable between the evidence and the conclusion ("A") will **NOT** be included in your assumption. Instead, your assumption connects the *new variable* in the conclusion ("C") to the *unmatched variable* in the evidence ("B").
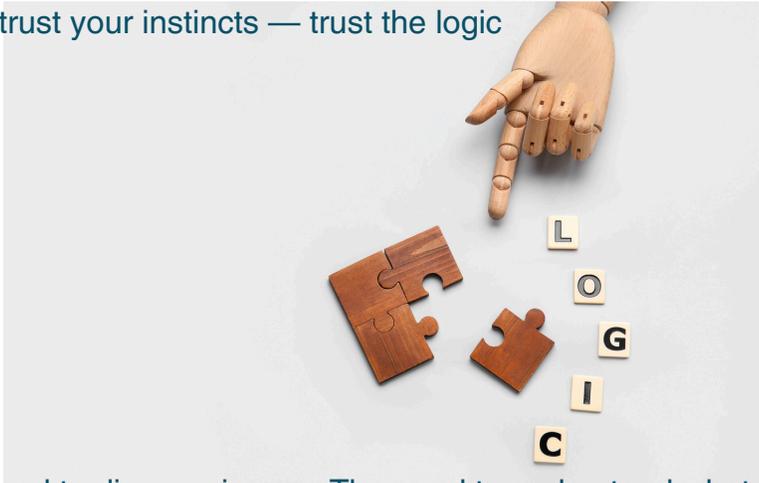
Part 8: Final Tips

✓ Memorize indicator words, try spaced repetition
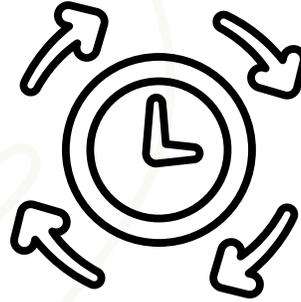
✓ Create a contrapositive of your prediction for correct answer

✓ Translate "unless" with "if not"

✓ Don't trust your instincts — trust the logic

✓ The need to diagram is rare. The need to understand what conditions you are looking at and the their relationship to each other is much more common

✓ Using letters instead of full words to diagram is a great time saver. However, in your head, think the words not the letters to make it easier to spot the correct answer choice

✓ Make sure to practice with real LSAT questions after finishing the drills

Conditional Diagramming Drill

Instructions: Use indicator words to diagram each statement and it's contrapositive.

1. If I hit snooze three times, I will be late to work.

2. Your ID is required to get into the concert venue.

3. Ordering dessert ensures the bill will be higher.

4. I will go to the gym only if my favorite class is open.

5. Every time I stay up past midnight, I regret it in the morning.

6. No cat enjoys taking a bath.

7. All the kids who studied hard and got enough sleep felt confident on test day.

8. Unless the power comes back on, the ice cream will melt.

9. We cannot play the board game until at least four players join.

10. I will ignore your message only when you text me during movie night.

11. Nothing will cure this headache except coffee.

12. To graduate, you must pass both Contracts and Torts.

13. Anyone who binge-watches all night will be tired or cranky tomorrow.

Conditional Diagramming Answers

1. HS3 → L
Contrapositive: ~L → ~HS3

2. Concert → ID
Contrapositive: ~ID → ~Concert

3. Dessert → Higher Bill
Contrapositive: ~Higher Bill → ~Dessert

4. Gym → Class Open
Contrapositive: ~Class Open → ~Gym

5. Past Midnight → Regret
Contrapositive: ~Regret → ~Past Midnight

6. Cat → ~Bath Enjoyment
Contrapositive: Bath Enjoyment → ~Cat

7. Study and Sleep → Confident
Contrapositive: ~Confident → ~Study or ~Sleep

8. ~Power → Melt
Contrapositive: ~Melt → Power

9. ~≥4 Players → ~Game
Contrapositive: Game → ≥4 Players

10. Ignore Msg → Text During Movie
Contrapositive: ~Text During Movie → ~Ignore Msg

Conditional Diagramming Answers cont.

11. ~Coffee → ~Headache Cure
Contrapositive: Headache Cure → Coffee

12. Graduate → Contracts and Torts
Contrapositive: ~Contracts or ~Torts → ~Graduate

13. Binge-Watch → Tired or Cranky
Contrapositive: ~Tired and ~Cranky → ~Binge-Watch

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