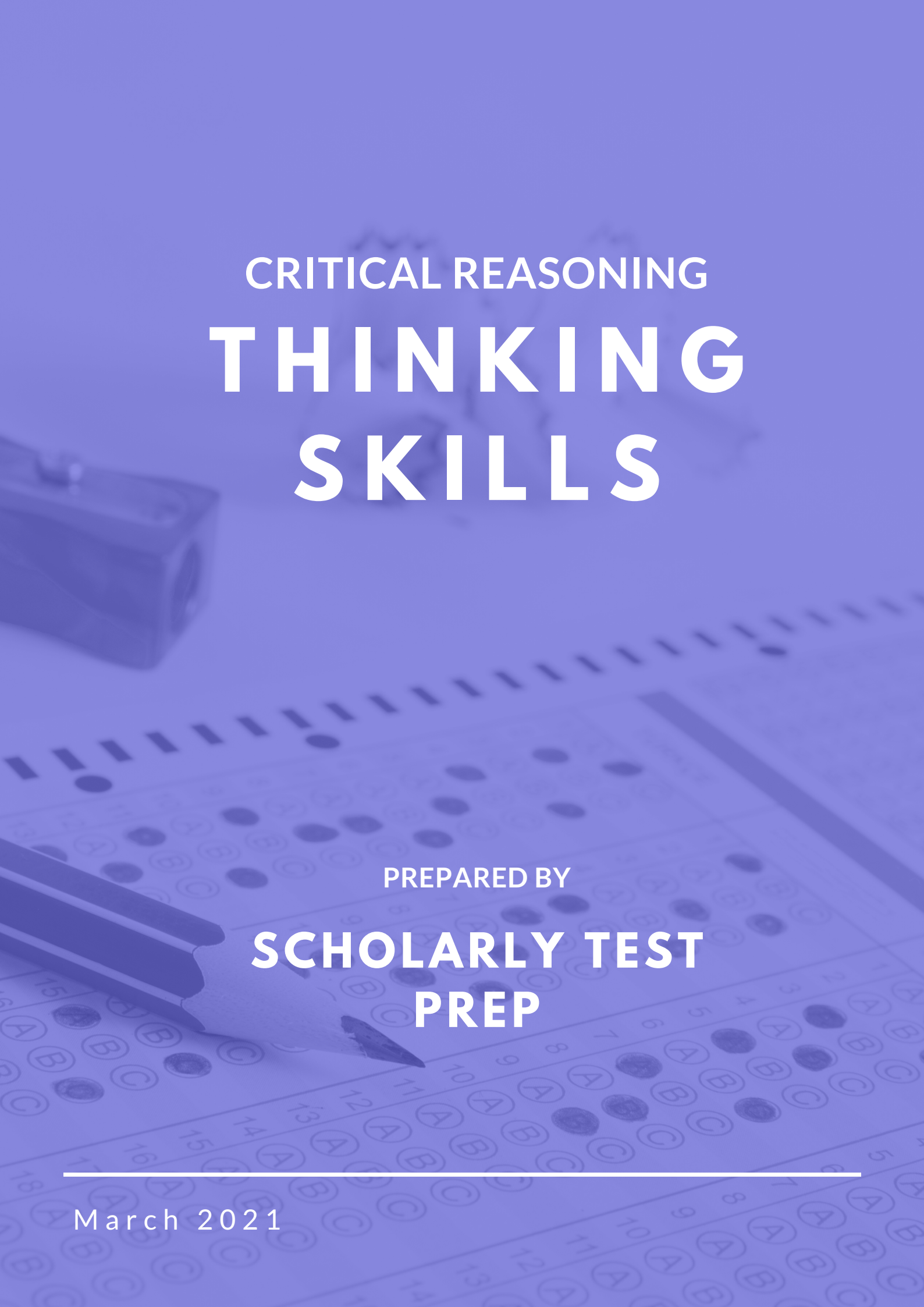
CRITICAL REASONING

THINKING SKILLS



PREPARED BY

SCHOLARLY TEST PREP

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DECONSTRUCTION OF GENERAL METHOD FOR CRITICAL REASONING QUESTIONS

Step 1: Read the **question stem** first. Not the answer choices, but the question stem. This will help you categorise the question into its question type.

Step 2: Read the stimulus (the paragraph). Now, the stimulus can basically be broken down into two parts – the premises and the conclusion. Identify these parts!

Step 3: Focus on the conclusion and read the question stem again.

Step 4: Eliminate the answer choices that are wrong. DO NOT try to make the answer choice FIT in with what you've been given. If you think it's wrong, eliminate it. If you're unsure, or if you think it's a good match, keep it until you've read all the options. The method of elimination works the best in critical reasoning. Never choose an answer before going through all the answer choices.

Step 5: Read the final answer choice you've chosen, and read the stem. Does this answer the stem concisely? If yes, pick the answer and move on. If you've eliminated all answer choices, go back to Step 3 and try to gather information more effectively.

IDENTIFYING PREMISES AND CONCLUSION

Identifying the **PREMISES** and the **CONCLUSION** in a stimulus is **CRUCIAL**.

The way I look at it, premise and assumption form the foundation to a conclusion.

This is also a place where the logical reasoning can crumble, if the author deduces something wrong from the premise.

The conclusion is supported by the premises and the assumptions.

An assumption is essentially the UNSTATED/INVISIBLE premise in the stimulus.

There are certain indicator words that can be used to differentiate the premise from the conclusion and these are fairly easy to remember.

PREMISE	CONCLUSION
Supports the conclusion – Answers the question of "Why?"	**Has a tone of finality. The main message of what the author is saying**
Because	Thus
Since	Therefore
For/For the reason	Hence
Due to	So
As indicated by	As a result of/Consequently
Furthermore	Accordingly
Given that	It follows that/It must be that

TYPES OF CRITICAL REASONING QUESTIONS

TYPES OF QUESTIONS

So now that we are familiar with the basic deconstruction, let's look at some question types. Here are some question types you should expect to see in the Thinking Skills Test. In red, are question types which *may* pop up. Again, as the test is quite new, we can't be certain on whether or not they will be there.

The following question types are VERY LIKELY to appear in the Selective Schools Test:

1. **Must Be True** – These are basic inference questions
2. **Impact of Additional Evidence**: *Which of the following will strengthen/weaken the argument?* These ask for answer choices that strengthen or weaken the conclusion of an argument.
3. **Detecting Reasoning Errors** – These ask you to determine the reasoning errors within an argument.

Some other question types that are UNLIKELY to but MAY appear in the Selective Schools Test include:

1. **Parallel Reasoning**
2. **Applying Principles-**These qs refer to finding a GENERAL & UNIVERSAL RULE from a particular situation, that can also be applied to other situations.
3. **Assumptions-**These refer to assumptions that help us prove the validity of the conclusions.
4. **Drawing Conclusion**
5. **Main Conclusion-**Regardless of whether it appears or not, you should be able to do this easily.

QUESTION TYPE #1: MUST BE TRUE

QUESTION STEM:

So the way you can identify these questions is by looking at the question stem. Some of the common phrases used in the question stem for this type are as follows:

"Who's statement is correct?"

"Which of the following can be inferred from the above?"

CORRECT ANSWER CHOICES:

Should be proven by the stimulus (Everything in the stimulus is considered true)

Will either restate conclusion/premises or rephrase them in a different manner

WRONG ANSWER CHOICES:

Answers that are possible but not certain

Answer choices that don't agree with the tone of the passage. Ie. answer option has too stronger/weaker wording than the stimulus

Answer choices that represent true information, but are NOT a direct inference from the stimulus, i.e. presenting new information, or bringing in external knowledge

Answer choices that reverse the causality or state the reverse of what's true.
(eg. stimulus states A→ B, but answer choice states B→ A. Beware- this causal flaw is very common!)

Answer choices that indicate a non-existent relationship.

Answer choices that are out of scope.

QUESTION TYPE #2A: WEAKENING ARGUMENTS

"Which of the following, if true, weakens the argument?"

"... if true": We **assume that the answer choices are TRUE and take them for granted – even if it introduces new information**. Firstly, focus isolating and identifying the premise and the conclusion. Then, identify any weaknesses in the argument that you can attack.

Remember, it is enough to **weaken** the argument; you don't have to prove it wrong.

Types of weaknesses to expose:

1. **Incomplete Information**: Not enough information is given, but a conclusion seems to be drawn from thin air.
2. **Improper Comparison**: Comparing apples to oranges
3. **Incorrect Causality**

Note on Causality:

An example of incorrect causality or reversal of causality follows:
"Last week Jack tried out a new restaurant on campus and the same week he got food poisoning. So Jack must have had food poisoning due to the new food"

This is not true. There might have been something else that Jack might have had which caused the food poisoning. Though this seems lucrative, this is a trap.

Here we are asked to assume that the two events take place in vacuum, that no other event could have influenced what happened. Event 1 strictly influenced Event 2, and that Event 2 couldn't have occurred without Event 1.

How to break down causality?

1. **Find an alternate cause**. This is the strongest way to weaken a causality based stimulus. For the above mentioned example, what if Jack had eaten left-over food from two days ago, and they had actually gone stale? Wouldn't that explain the food poisoning?

2. **Show that the change might not occur even when cause occurs or that the effect can occur without the cause.** This could mean Jack eating at the restaurant previously, without any food poisoning. Jack could have gotten food poisoning earlier when he had left-over food.

3. **Show that the stated relationship is reversed.** This is where you prove that what is perceived to be the effect produces what is thought of as the cause

QUESTION TYPE #2A: WEAKENING ARGUMENTS

QUESTION STEM:

"Which one of these statements, if true, most weakens the above argument?"

CORRECT ANSWER CHOICES:

Will point out any obvious reasons for the illogical conclusion. Shows errors in reasoning in the formation of the conclusion.

Attacks or exposes weaknesses in the premise-to-conclusion link.

Breaks down causality

Point out improper comparisons between two scenarios that the author assumed

Points out any inappropriate generalisations

WRONG ANSWER CHOICES:

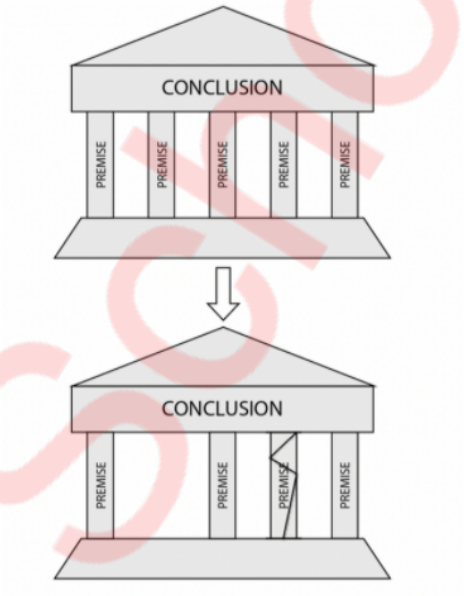
Opposite Answers (strengthens rather than weakens)

Out of Scope & Irrelevant Answers

Wrong Tone in Answers

Reversal of Causality or incorrect causality

Rephrasing or repeating stimulus. Options that simply restate premises or statements from stimulus have ZERO effect, and does NOT strengthen/weaken



WAYS TO WEAKEN AN ARGUMENT

- REMOVING A PREMISE
  - REMOVING A PILLAR (PREMISE) THAT SUPPORTS THE ROOF (CONCLUSION)
- INTRODUCING A 'CRACK' AKA A FLAW (IN PREMISE)
  - CRACKING THE PILLAR, THUS CAUSING THE ROOF TO LOSE ITS FOUNDATION

QUESTION TYPE #2B: STRENGTHENING ARGUMENTS

QUESTION STEM:

"Which one of these statements, if true, most strengthens the above argument?"

Stem would **indicate some kind of "support" relationship – strengthen, justify, help, support** and so on.

CORRECT ANSWER CHOICES:

Will bridge & fix a gap that potentially leads to an illogical conclusion

Find a missing link between two scenarios that the author assumed

Helps establish causality

Will validate (prove) an (unstated) assumption or rule out a discrepancy in the logic of the conclusion forming process.

WRONG ANSWER CHOICES:

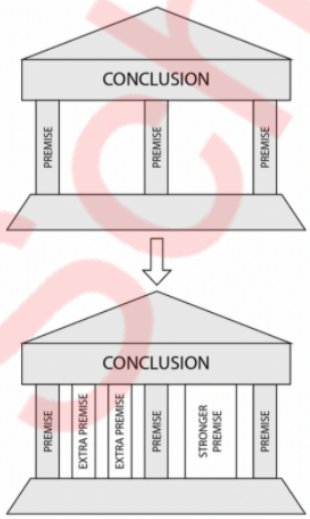
Opposite Answers (Actually WEAKENS rather than STRENGTHENS)

Out of Scope & Irrelevant Answers

Wrong Tone in Answers

Reversal of causality or incorrect causality

Rephrasing or repeating stimulus. Options that simply restate premises or statements from stimulus have ZERO effect, and does NOT strengthen/weaken



WAYS TO STRENGTHEN AN ARGUMENT

- ADDING A PREMISE THAT SUPPORTS THE CONCLUSION
  - ADD ANOTHER SUPPORTING PILLAR TO THE PARTHENON
- STRENGTHENING A PREMISE THAT ALREADY EXISTS
  - INCREASE THE SIZE/STRENGTH OF AN EXISTING PILLAR

For example, add information that makes the existing premises more relevant to the conclusion.

QUESTION TYPE #3: DETECTING REASONING ERRORS

Detecting reasoning error questions are very likely to appear in the Selective Schools Test.

Possible Question Stems

- “Which one of the following identifies the flaw in the above argument?”

OR

- “Who is correct?" [Dialogue question]

Thus, you will need to figure out if an argument is correct or flawed. If it is flawed, you have to work out what is wrong with the argument, namely find the flaw in the authors reasoning.

Here is a list of some flaw types:

- Causation flaw
- Correlation vs Causation (a type of causation flaw)
- Ignoring other possibilities
- Conflation (Drawing inappropriate comparisons between two different ideas, aka apples to oranges)
- Jumping to conclusions (Slippery Slope)
- Hasty generalisations

The Selective Schools Test will likely NOT present the flaws in the PARTICULAR NAMES used above (ie. Selective Schools Test won't include 'hasty generalisation", but rather rewrite this idea in a more simple way)

For a detailed breakdown of different types of flaws, refer to:

- Term 1 Week 3 (Friday)
- Summer Holiday Day 8

5 QUICK TIPS FOR CRITICAL REASONING

Tip #1: Use Indicators to Identify Argument Parts

Conclusion Indicators	Premise Indicators	Counter-premise Indicators	Additional Premise Indicators
thus	because	But	Furthermore
therefore	since	Yet	Moreover
hence	for	However	Besides
consequently	for example	On the other hand	In addition
as a result	for the reason that	Admittedly	What's more
so	in that	In contrast	
accordingly	given that	Although	
clearly	as indicated by	Even though	
must be that	due to	Still	
shows that	owing to	Whereas	
conclude that	this can be seen from	In spite of	
follows that	we know this by	Despite	
for this reason			

Tip #2: Carefully Consider Every Answer Option

You have to be like Gordon Ramsay selecting the BEST among the 4 dishes (aka answer choices).

You must be SUPER CAREFUL as the qualitative difference between the best and second-best can be VERY SUBTLE.

Unless you carefully consider all 4 answer choices, you might accidentally select the second-best one without even reading the best one.

Tip #3: Read Closely & Precisely

Reading precision is crucial.

If you misread or misinterpret the passage, you're TOAST.

So before you move on to the answer choices on the question, ask yourself: am I paying attention to the author's EXACT word choice, or am I putting words in the author's mouth?

5 QUICK TIPS FOR CRITICAL REASONING

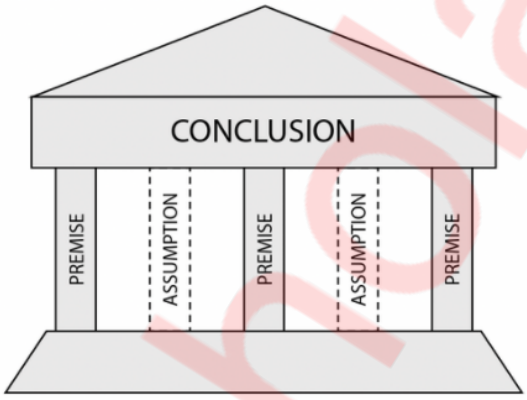
Tip #4: Determine if the Argument is Strong or Weak

To determine how strong an argument is, consider the relationship between the premises and the conclusion:

Do the premises STRONGLY suggest that the conclusion would be true?
Does the conclusion feel like an inevitable result of the premises?
Or does the conclusion seem to go beyond the scope of the premises?

Tip #5: Parthenon Model for Argument Representation

Argument: stated premise(s) + assumption(s) → inference (conclusion)



ARGUMENT=PARTHENON

CONCLUSION=ROOF

PREMISES=VISIBLE SUPPORTING PILLARS

ASSUMPTIONS=INVISIBLE SUPPORTING PILLARS

LOGIC GAMES

LOGIC GAMES= TORRENT OF INFORMATION

Logic Games Tips

1: STICK TO THE RULES!

- You MUST ADHERE to the rules
- Sometimes, you can easily eliminate OPTIONS if they contradict with the rules

2: IDENTIFY THE VARIABLES!

- Quickly list out the variables
  - eg. fave colour, height, job
- How many variables are there?
- If there's only 2 variables, you might be able to solve the q without a diagram

3: APPROPRIATE & SIMPLE DIAGRAMS

- Grid
- Line joining
- Sequences
- Symbols

4: REDO QUESTIONS

Attempt to reproduce your process (inferences, method) with speed and control

5: SPLIT CASES INTO POSSIBLE CASES

- if there are >1 possible case, you could create separate diagrams to work out possible cases
- Keep a list of POSSIBLE and IMPOSSIBLE samples
- Warning: TIME CONSUMING

6: IF IT'S TOO HARD AND ONLY WORTH 1 MARK... MOVE ON!!!

- You DO NOT WANT to SACRIFICE >3 min for 1 question, perhaps get it wrong anyway, and MISS OUT ON OTHER MARKS
- You can always come back

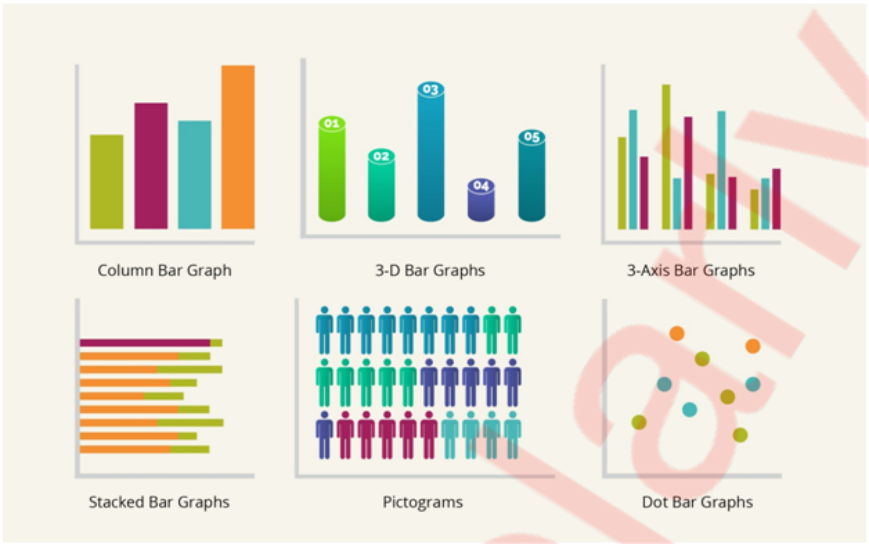
RELEVANT SELECTION

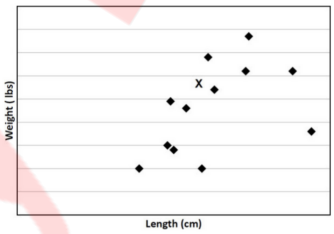
Basically, you'll be presented with DATA in a graph.
There are many different types of graphs.
Some graph types may be *funky* or unfamiliar to you guys.

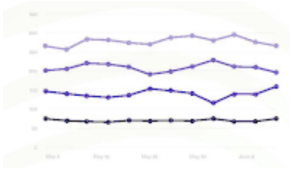
It is your job to choose the RELEVANT INFORMATION within the graph to solve the question.

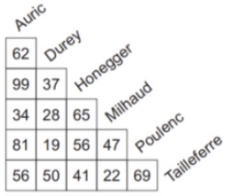
Sometimes, there is a USELESS information that you can DISCARD.

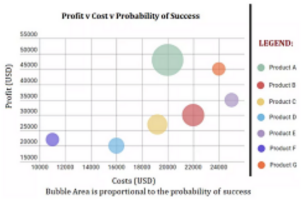
You may need to use some simple arithmetic (add, subtract, divide, multiply) to solve the question

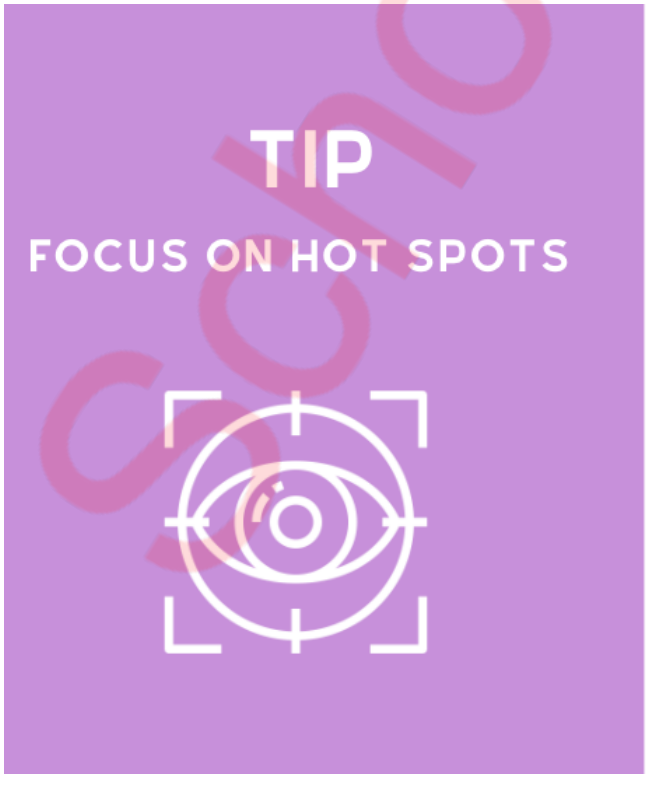












HEADINGS & SUBHEADINGS

For tables, read every single table heading and row/column titles

SCALES/UNITS/LEGENDS/KEYS/AXES

Pay attention!

QUESTION STEM

Keep in eye out for key words. Don't JUMP to conclusions.

ANSWER CHOICES

Eliminate, eliminate, eliminate.
Sometimes, attack the slight differences in the answer choices, refer back to the data, and eliminate.

TOPIC BY TOPIC BREAKDOWN IN PAST VIDEOS

Term 1 Topics

Week	Topics
1	• Strengthening & Weakening Arguments • Assessing Two People Arguments • Critical Reasoning Tips
2	• Data Analysis & Relevant Selection • Spatial Reasoning • Problem Solving Tips
3	• Identifying Assumptions • Detecting Reasoning Errors
4	• Logic Games
5	• Truth & Validity • Applying Principles

Holiday Topics

Days	
1-2	• Critical Reasoning Basics • Strengthening & Weakening Arguments • Syllogisms
3-4	• Data Analysis & Relevant Selection • Logic Games Part 1
6-7	• Spatial reasoning • Logic Games Part 2
8-9	• Inferences & Logical Deduction • Detecting Reasoning Errors • Truth & Validity

GOOD LUCK!