MentR-Me

GMAT
Guide

Logic and Problem-Solving Skills

INTRODUCTION TO QUANTS

Introduction

The GMAT is a standardized test used to assess the quantitative and verbal skills of applicants to business school programs. The Logic and Problem-Solving section of the GMAT is designed to evaluate a test-taker's ability to apply logic, reasoning, and problem-solving skills to a variety of quantitative contexts.

The Nature of Logic and Problem-Solving

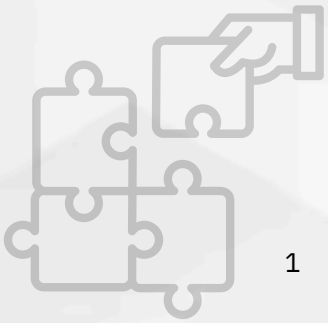
Logic

Logic is the study of correct reasoning and argumentation. It provides a set of rules and principles that can be used to identify valid arguments and conclusions. These rules and principles are based on the fundamental principles of human thought, such as the law of identity (A is A), the law of non-contradiction (A cannot be both A and not A), and the law of excluded middle (A is either A or not A).

Problem-Solving

Problem-solving is the process of applying logic and other cognitive skills to find solutions to problems. It involves a series of steps, such as:

- Defining the problem
- Gathering information
- Analyzing the information
- Generating solutions
- Evaluating solutions
- Selecting a solution
- Implementing the solution



The Importance of Logic and Problem-Solving in the GMAT

Logic and problem-solving are essential skills for success in the GMAT. The Logic and Problem-Solving section of the test assesses a test-taker's ability to:

- Analyze information and identify patterns
- Draw inferences and conclusions
- Formulate and test hypotheses
- Solve problems using a variety of strategies

These skills are essential for success in business school and in the workplace. By developing these skills, you will be able to:

- Make sound decisions under pressure
- Think critically and analytically
- Solve complex problems
- Communicate effectively

Key Concepts and Strategies

Logical Fallacies

A logical fallacy is an error in reasoning that can lead to an invalid conclusion. Logical fallacies can be committed in a variety of ways, including:

- Using faulty premises
- Drawing invalid conclusions
- Making inappropriate comparisons
- Using misleading language

There are many different types of logical fallacies, but some of the most common include:

- Ad hominem attacks
- Strawman arguments
- Hasty generalizations
- False analogies

It is important to be able to identify logical fallacies in order to avoid making flawed arguments and to make sound judgments.

Example of a Logical Fallacy: Ad hominem attack

Argument: "You can't trust what Professor Smith has to say about the stock market. He's just a failed investor himself."

Fallacy: Ad hominem attack. The argument attacks the person making the statement (Professor Smith) rather than the statement itself.

Problem-Solving Strategies

There are a number of effective problem-solving strategies that can be applied to GMAT Logic and Problem-Solving questions. These strategies include:

- Breaking the problem down into smaller, more manageable steps
- Drawing diagrams or charts to visualize the information
- Using estimation and backsolving techniques
- Eliminating answer choices that are clearly wrong

By using these strategies, you can increase your chances of solving GMAT Logic and Problem-Solving questions correctly.

Example of a Problem-Solving Strategy: Breaking the problem down

Problem: A company produces widgets that cost $5 each to produce. The company sells the widgets for $10 each. If the company produces 1,000 widgets, how much profit will it make?

Solution:

1. Break the problem down into smaller steps:
- What is the cost to produce one widget? ($5)
- What is the selling price of one widget? ($10)
- How many widgets are being produced? (1,000)

2. Calculate the profit per widget:
- Profit per widget = selling price - cost to produce
- Profit per widget = $10 - $5 = $5

3. Calculate the total profit:
- Total profit = profit per widget × number of widgets
- Total profit = $5 × 1,000 = **$5,000**

TIPS TO EXCEL

- Understand the concepts and principles of logic: A strong foundation in logic will help you identify valid arguments, recognize logical fallacies, and draw sound conclusions.

- Practice strategies like breaking down problems into smaller steps, drawing diagrams or charts, using estimation and backsolving techniques, and eliminating answer choices that are clearly wrong.

- Become familiar with the GMAT question formats. Practice with different question formats to become familiar with the expectations and requirements of each type.

- Time yourself as you practice. The GMAT is a timed test, so it's important to practice under timed conditions. This will help you make smart decisions about how to allocate your time during the test.

- Review your mistakes and learn from them. Identify the areas where you made errors and develop strategies to avoid making the same mistakes in the futur