

# GMAT<sup>®</sup>

## STRATEGY SHEET

Use this sheet to help you remember your math content. Be sure also to make use of the Kaplan Methods on the reverse side.

### Strategies and Test Day Tips:

#### Picking Numbers:

Pick numbers that are permissible and manageable.

#### Backsolving:

Start with choice (B) or (D).

#### Equations and Variables:

$n$  distinct linear equations are needed to solve for  $n$  variables.

#### DATA SUFFICIENCY

1 (A) #1 is Suff.; #2 is Not Suff.

2 (B) #2 is Suff.; #1 is Not Suff.

T (C) #1 is Not Suff.; #2 is Not Suff.; #1 AND #2 are Suff.

E (D) #1 is Suff.; #2 is Suff.

N (E) #1 is Not Suff.; #2 is Not Suff.; #1 AND #2 are Not Suff.

### Triangles:

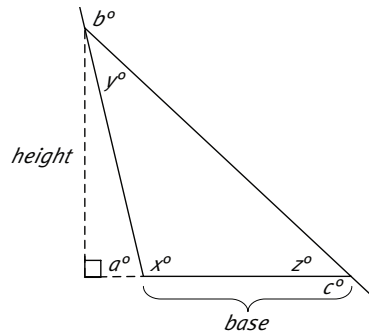
$x + y + z = 180^\circ$  (Interior angles)

$a + b + c = 360^\circ$  (Exterior angles)

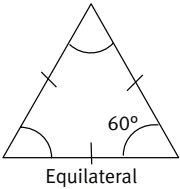
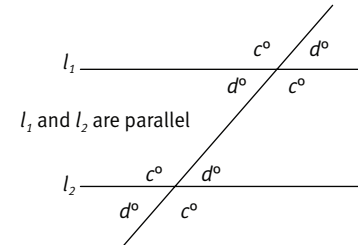
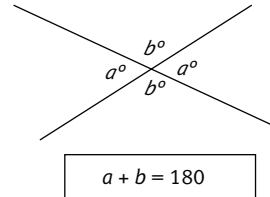
$a = y + z$ ;  $b = x + z$ ;  $c = x + y$

Area =  $\frac{1}{2} \text{base} \times \text{height}$

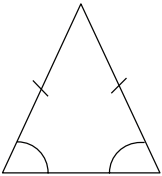
Sum of any 2 sides > 3rd side



### Angles:

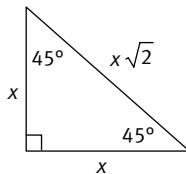
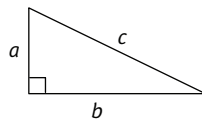


Equilateral

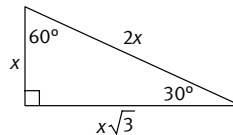


Isosceles

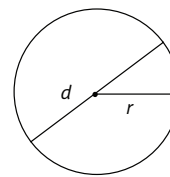
### Right Triangles:



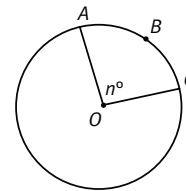
**Side Ratios**  
(Pythagorean Triples)  
3:4:5  
5:12:13  
7:24:25  
8:15:17  
9:40:41  
 $a^2 + b^2 = c^2$



### Circles:



$d = 2r$   
 $C = 2\pi r$  or  $\pi d$   
 $A = \pi r^2$   
360° around



$\frac{n}{360} = \frac{\text{Arc } ABC}{\text{Circum.}} = \frac{\text{Area of sector } OABC}{\text{Area of circle } O}$

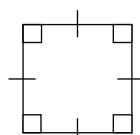
### Order of Operations:

PEMDAS—Parentheses, Exponents, Multiplication and Division, Addition and Subtraction

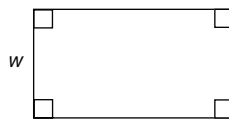
### FOIL:

First, Outer, Inner, Last  
 $(a + b)(c + d) = ac + ad + bc + bd$

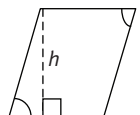
### Quadrilaterals: Sum of interior angles = 360°



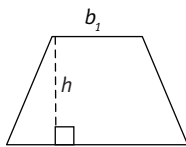
$A = s^2$



$A = lw$

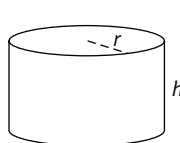


$A = bh$

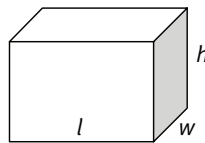


$A = \frac{1}{2}(b_1 + b_2)h$

### Uniform Solids:



$V = \pi r^2 h$   
 $SA = 2\pi r^2 + 2\pi rh$



$V = lwh$   
 $SA = 2(lw + lh + wh)$

### Other Formulas and Things to Know:

Speed =  $\frac{\text{Distance}}{\text{Time}}$     Average =  $\frac{\text{Sum of the terms}}{\text{Number of terms}}$     Average Speed =  $\frac{\text{Total Distance}}{\text{Total Time}}$     Rate =  $\frac{\text{Quantity of A}}{\text{Quantity of B}}$   
% Increase =  $\frac{\text{New Amount} - \text{Original Amount}}{\text{Original Amount}} \times 100\%$     % Decrease =  $\frac{\text{Original Amount} - \text{New Amount}}{\text{Original Amount}} \times 100\%$

### Exponent Rules:

$x \cdot x = x^2$      $(x^a)^b = x^{ab}$   
 $x^{-a} = \frac{1}{x^a}$      $\frac{x^a}{x^b} = x^{a-b}$   
 $x^0 = 1$     (negative)<sup>odd</sup> = negative  
 $x^a x^b = x^{a+b}$     (negative)<sup>even</sup> = positive

### Radical Rules:

$\sqrt{a} \sqrt{b} = \sqrt{ab}$   
 $\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$   
 $a\sqrt{c} + b\sqrt{c} = (a + b)\sqrt{c}$   
 $\sqrt{a} + \sqrt{b} \neq \sqrt{a + b}$   
 $(\sqrt{a})^2 = a$

### Numbers:

0 is an even integer.  
1 is *not* prime.  
2 is the lowest prime number and the only even prime number.  
Mode: the most common number(s) in a set  
Median: the middle term in a set of ascending or descending numbers; when the set has an even number of numbers, the average of the two middle terms  
Only (odd) × (odd) and (odd) + (even) yield odd numbers.

### Miscellaneous:

$ab + ac = a(b + c)$      $\frac{a+b}{c} = \frac{a}{c} + \frac{b}{c}$   
 $x\% \text{ of } y = y\% \text{ of } x$      $|-x| = |x|$

### Work Formula:

$T = \frac{ab}{a + b}$

### Coordinate Plane: In the $xy$ -plane, the $y$ -axis is vertical, and the $x$ -axis is horizontal.

Standard form of a line:  $y = mx + b$   
(where  $m$  is the slope, and  $b$  is the  $y$ -intercept)

Slope =  $\frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$

# The Analytical Writing Assessment

## The Kaplan Method

- 1) Take apart the argument.
- 2) Select the points you will make.
- 3) Organize using Kaplan's essay template.
- 4) Write your essay.
- 5) Proofread your work.

## Kaplan Argument Essay Template

Paragraph 1: Show that you understand the argument by putting it in your own words.

Paragraph 2: Point out one flawed assumption in the author's reasoning; explain why it is questionable.

Paragraph 3: Identify another source of the author's faulty reasoning; explain why it is questionable.

In additional paragraphs, describe other points of fault in the argument, as time permits.

Second-to-last paragraph: Describe evidence that would—if it were provided—strengthen the argument.

Final paragraph: Conclude that without such evidence, you're not persuaded.

## Integrated Reasoning

Graphics Interpretation: Tests your ability to use visual data (presented as graphs, diagrams, or other visual information); look at the answer choices when deciding your approach, but don't let them distract you.

Multi-Source Reasoning: Tests your ability to synthesize multiple sources of data (2–3 tabbed pages containing text, charts, or tables); create a brief outline (like a Passage Map) on your notebook; return to the tabs as needed to research individual questions.

Table Analysis: Tests your ability to interpret data in spreadsheets; use the sorting function as needed to visualize trends in the data.

Two-Part Analysis: Tests your ability to answer questions that contain two separate components; can require both quantitative and verbal skills; double-check that you do not mix up the two columns when selecting your answers.

## The Quantitative Methods

### The Kaplan Method for Problem Solving

- 1) Analyze the question.
- 2) State the task.
- 3) Approach strategically.
- 4) Confirm your answer.

### The Kaplan Method for Data Sufficiency

- 1) Analyze the question stem.
  - Determine Value or Yes/No.
  - Simplify.
  - Identify what is needed to answer the question.
- 2) Evaluate the statements using 12TEN.

### Kaplan Data Sufficiency Strategies

For Value questions, seek to find a single value.

For Yes/No questions, seek to find a definite answer to the question.

Keep track of your options as you go.

- If (1) is sufficient, the answer must be (A) or (D).
- If (1) is insufficient, the answer must be (B), (C), or (E).
- If (2) is sufficient, the answer must be (B) or (D).
- If (2) is insufficient, the answer must be (A), (C), or (E).

Do not let information from one statement influence your decision about the other statement.

Combine statements only if each is insufficient individually.

When combining statements, treat them as one long statement.

## The Verbal Methods

### The Kaplan Method for Reading Comprehension

- 1) Read the passage strategically.
- 2) Analyze the question stem.
- 3) Research the relevant text.
- 4) Make a prediction.
- 5) Evaluate the answer choices.

### Kaplan Reading Comprehension Strategies

Global questions: Use Topic, Scope, and Purpose, and your Passage Map to predict the correct answer.

Detail questions: Use your Passage Map to target your research.

Inference questions: Use clues in the question stem or answer choices to research; the correct answer will follow from the passage.

Logic questions: Use your Passage Map and keywords to determine why or how the author uses the reference.

### The Kaplan Method for Critical Reasoning

- 1) Identify the question type.
- 2) Untangle the stimulus.
- 3) Predict the answer.
- 4) Evaluate the choices.

### Kaplan Critical Reasoning Strategies

Assumption: Identify the conclusion and evidence; determine the central assumption; predict the answer.

Strengthen or Weaken: Identify the conclusion and evidence; determine the central assumption; predict the answer that confirms (strengthens) or denies (weakens) the central assumption.

Evaluation: Identify the conclusion and evidence; determine the central assumption; predict an answer that identifies missing information that would help in assessing the assumption's validity.

Flaw: Identify the conclusion and evidence; determine the central assumption; predict a choice that describes the logical fallacy of the assumption.

Explain: Search the answer choices for a statement that, if true, could explain how the statements in the stimulus could all be true.

Inference: Accept the statements in the stimulus as true; locate the answer choice that must follow from the stimulus.

Bolded Statement: Identify the purpose of every sentence in the stimulus and select the answer that matches your description of the bolded statements.

### The Kaplan Method for Sentence Correction

- 1) Read the original sentence carefully, looking for errors.
- 2) Scan and group the answer choices.
- 3) Eliminate choices until only one remains.

### Six Classic Sentence Correction Errors

Verbs: Check for number agreement and tense.

Pronouns: Check for antecedent and number agreement.

Modification: Check for proper placement and intended reference.

Parallel Structure: Be consistent; use parallel constructions.

Comparisons: Use parallel construction; make sure items are logically comparable.

Usage/style: Avoid redundancy and passive voice; use idioms correctly.