Think Smarter, Not Harder

MATH SECTION

The Math Section

- Three levels of difficulty: Easy, Medium, and Hard
- Roughly speaking, the questions are arranged in order of difficulty
- The first 6 or 7 will be Easy; the next 6 or 7 will be Medium; and the next 6 or 7 will be Hard

Slow Down, Score Better

- You're scored based on the raw number of points, not a percentage of the points
- You get 1 point for every right answer and you lose ¼ for every wrong answer (the guessing neutralizer)
- Get the points you can get, and avoid the places you're likely to lose points

Slow Down, Score Better

- The ‘Average’ person speeds through the Easy section to save more time for the Hard section; they usually make a few careless errors
- When they get to the Hard section, they find questions that they might not get right even if there was no time limit
- An ‘Average’ Score:
  - Easy: 5 right, 2 wrong, 0 skipped
  - Medium: 4 right, 3 wrong, 0 skipped
  - Hard: 1 right, 4 wrong, 1 skipped
  - TOTAL: 10 right, 9 wrong, 1 skipped = 10 – 9/4 = 7.75 total points

Slow Down, Score Better

- The person who slows down:
  - Easy: 7 right, 0 wrong, 0 skipped
  - Medium: 5 right, 1 wrong, 1 skipped
  - Hard: 1 right, 1 wrong, 4 skipped
  - TOTAL: 13 right, 2 wrong, 5 skipped = 13 – 2/4 = 12.5 total points
- You're not seeing that wrong… this person did fewer questions and scored better
- It's easier to do 15 questions in 25 minutes than it is to do 20 questions in 25 minutes
- If your goal is 700 or above, do all the questions

Avoid the Predictable

- They know what you're going to think, and it's not because they're psychic… the human brain is just that predictable.
- They create wrong answers that you're likely to come up with.
- Turn the tables on them; they're just as predictable as you!
- If it's a really hard question and the answer seems too easy to be true, it probably is.

General Tricks

- Process of Elimination
  - There are four wrong answers and one right one; therefore, it's easier to find the wrong answers than it is to find the right one
- Ballparking
  - You can estimate to eliminate answer choices
- Calculators: Garbage In, Garbage Out
  - Your calculator cannot fix your mistakes, so make sure that you plug everything in correctly

Bite-Sized Pieces

- They make simple math difficult by turning it into a reading comprehension question
- Simply draw a line or a bracket in the middle of the sentence every time you come to the end of one piece of information
- Then work through the problem one step or piece at a time

Plugging In

- Clare is C years old and is 6 years younger than Alan. In terms of C, how many years old will Alan be in 3 years?
  - A: C - 6
  - B: C - 3
  - C: C + 3
  - D: C + 5
  - E: C + 9
- Have you ever met ANYONE who was “C” years old? Give Clare an age!

Plugging In

- WHEN: Anytime you see a variable in the answer choice, PLUG IN for that variable
- WHAT YOU CAN AND CAN'T PLUG IN:
  - DO NOT: 0 or 1 (could nullify the question)
  - DO NOT: A number that appears in the answer or the question (if it's already there, it isn't the variable)
  - DO NOT: The same number for two different variables (if they were the same number, they'd be the same variable)
  - DO: Simple numbers or any number that makes the question easy to solve

PLUGGING IN

- The Process:
  - Put a line through the phrase “in terms of”
  - Plug in a number for any variables you see in the answer choice
  - Cross out that variable and replace it with your number ANYWHERE you see it in the question or the answer choice
  - Solve the problem and find your TARGET; write that down and draw a box around it
  - Solve each answer choice and find the one that matches your TARGET

PLUGGING IN

- Clare is 10 years old and is 6 years younger than Alan. How many years old will Alan be in 3 years?
  - A: 10 - 6
  - B: 10 - 3
  - C: 10 + 3
  - D: 10 + 5
  - E: 10 + 9
- Clare is 10; Alan is 16; in 3 years, Alan will be 19
- (No matter what number you plug in, the answer will always be E)

PLUGGING IN THE ANSWER

- WHEN: If it asks for a specific value and the options for that value are the answer choices
  - “What is the value…” “How much…” “How many…”
  - No variables in the answer choice
- THE PROCESS
  - Start with answer choice C; the answers appear in chronological order, so you will be able to determine whether C is too big or too small and then cross out two other answers
  - Plug answer choice C into the problem and work through the steps
  - If C is too big, eliminate the answer choices that are bigger; if C is too small, eliminate the answer choices that are smaller
- Keep testing answers until you find the choice that makes the problem work

PITA

- Adam is half as old as Bob and three times as old as Cindy. If the sum of their ages is 40, what is Bob's age?
  - A: 3
  - B: 6
  - C: 12
  - D: 18
  - E: 24

PITA

- C: 12
  - If Bob is 12, Adam is __; If Adam is __, Cindy is __
  - 12+ ___ + ___ = ___
  - Is it the answer?
  - If not, is it too big or too small? Should you go up or down?

PITA

- Just walk through the steps, one by one, for each answer until you find the right one.
- The right answer will make the whole question work.

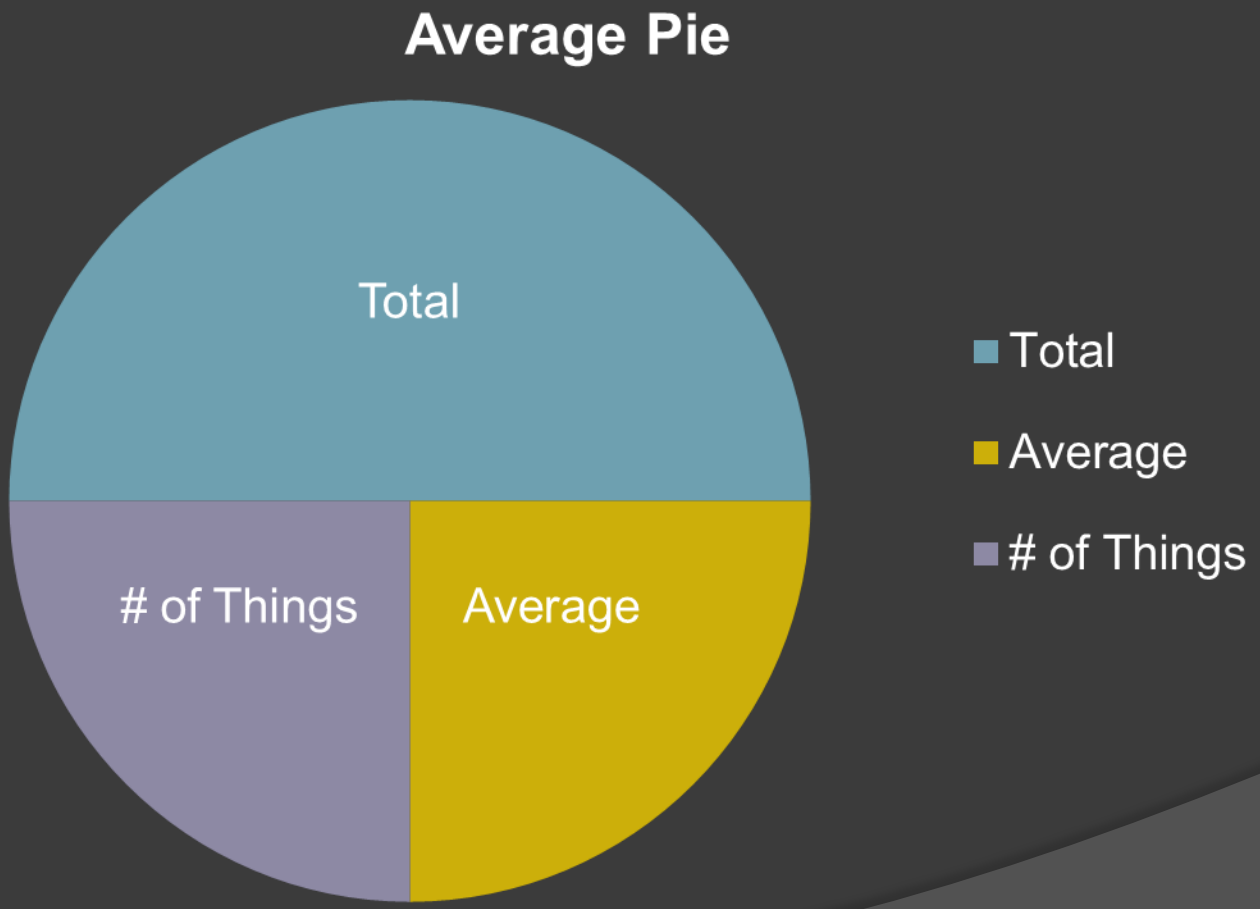
FUNCTION QUESTIONS

- They’re just Plugging In questions
- Ignore the funny symbols… they GIVE you the number to Plug In in the middle of the funny symbols

SIMULTANEOUS EQUATIONS

- Simultaneous Equations
  - Stack ‘em and solve
  - You can add them together, subtract one from the other, multiply or divide one equation by something, multiply or divide the answer by something
  - Just pay attention to what they’re asking you to find and do what you need to do to make your answer match

THE AVERAGE PIE



THE AVERAGE PIE

- Drawing the Pie
  - Draw a circle
  - Draw a line across the middle
  - Draw a line through the lower half
  - The top part (the largest area) is for your Total
  - The left hand section of the lower part is for the # of Things
  - The right hand section of the lower part is for the Average
- Fill in whatever the question gives you and use those to find what you don't know
  - The # of Things multiplied by the Average = the Total
  - The Total divided by the # of Things = the Average
  - The Average divided by the # of Things = the Total
- If the question asks you to find more than one average, draw more than one pie

THE RATIO BOX

LABELS			TOTAL
RATIO			
MULTIPLY BY			
ACTUAL NUMBERS			

THE RATIO BOX

- Drawing the Box
  - Four rows
    - Row 1 is your labels
    - Row 2 is the ratio
    - Row 3 is the Multiply By Bar (a constant number all the way across)
    - Row 4 is the Actual Numbers
  - The number of columns depends on the ratio
    - One for each number in the ratio
    - One for the Total

THE RATIO BOX

- Filling in the Box
  - First, fill in any numbers that the problem gives you
  - Add across the Ratio and Actual Number rows to find the total
  - Multiply down each column (Ratio x Multiply By = Actual Number)
- Identify the number that the problem wants you to find and find it in the Box

GEOMETRY

- Use the Formula Bar!!!
  - Circle formulas: Area AND Circumference
  - Area of Triangle and Rectangle
  - Volume Formulas
  - Sides for 30-60-90 and 45-45-90 Triangles
- Remember to Ballpark; it will usually eliminate one or two answers
- If they don't give you a diagram, DRAW ONE!!!

GEOMETRY

- They LOVE Pythagorean Triples!
  - 3-4-5
  - 6-8-10
  - 5-12-13
- They also love Special Right Triangles
  - 45-45-90
  - 30-60-90
  - The side lengths are in the formula bar
- If they're asking about coordinate planes, forget the Distance Formula; just draw a Right Triangle!

GEOMETRY

- You can Plug In for variables and Plug In The Answer on Geometry too
- Apply all of the same rules as you do on Algebra problems