GMAT DATA INSIGHTS

Charts, Tables & Data Sufficiency, Decoded



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Data Sufficiency, Mastered

Data Sufficiency (DS) is the most alien question type on the GMAT and, once mastered, the most mechanical. Every DS question has the same anatomy:

- **A question stem:** "What is the value of x?" or "Is y greater than 5?"
- **Statement (1)** and **Statement (2):** two pieces of information.
- **Five fixed answer choices** - the same five on every DS question you will ever see.

Your job is **not** to answer the question stem. Your job is to decide whether the statements give you *enough information* to answer it. This distinction is everything. Internalize it now: on DS, solving the stem fully is usually a waste of time. You stop the moment you know the answer *could* be determined.

The Five Answer Choices (Memorize These)

Choice	Meaning
(A)	Statement (1) by itself answers the question; statement (2) by itself does not.
(B)	Statement (2) by itself answers the question; statement (1) by itself does not.
(C)	Neither statement works by itself, but the two used together answer the question.
(D)	Either statement by itself answers the question.
(E)	Even with both statements together, the question cannot be answered.

These are paraphrases; the test uses its own fixed wording, but the five meanings are exactly these. Read them carefully. The choices form a decision tree, and the tree has a standard traversal: the **AD/BCE framework**.

The AD/BCE Framework, Step by Step

Step 1: Evaluate statement (1) alone. Forget statement (2) exists.

- If (1) alone is sufficient, the answer is **A or D**. (Eliminate B, C, E.)
- If (1) alone is not sufficient, the answer is **B, C, or E**. (Eliminate A, D.)

Step 2: Evaluate statement (2) alone. Forget statement (1) exists.

- If you kept A/D: if (2) alone is also sufficient, answer **D**. If not, answer **A**.
- If you kept B/C/E: if (2) alone is sufficient, answer **B**. If not, move to step 3.

Step 2: (2) alone: $|x| > 5$ means $x > 5$ or $x < -5$. Either way $x^2 > 25$ (e.g., $6^2 = 36$ and $(-6)^2 = 36$). Definite yes - sufficient.

Answer: **D**.

Lesson: both statements give the same *answer* (yes), but by independent paths: (2) allows negative values that (1) rules out, and it still forces "yes." D requires only that each statement alone suffices. One more rule worth knowing: on the real test the two statements never contradict each other - some value always satisfies both. If your work shows (1) forcing "yes" and (2) forcing "no," you have made an error; recheck.

Example 3: The classic C.

What is the value of $x + y$?

(1) $x = 7$

(2) $y = 3$

Step 1: (1) alone: $x = 7$, but y unknown - $x + y$ could be anything. Not sufficient. Keep B/C/E.

Step 2: (2) alone: $y = 3$, x unknown. Not sufficient.

Step 3: together: $7 + 3 = 10$. Sufficient.

Answer: **C**.

Lesson: C answers are the ones where each statement contributes one piece of a two-piece puzzle. When you see statement (1) give you x and statement (2) give you y, expect C - but verify, because sometimes the pieces overlap or conflict.

Example 4: The trap E (statements that look combinable but are not).

What is the value of x?

(1) $x^2 = 36$

(2) $x > 0$

Step 1: (1) alone: $x = 6$ or $x = -6$. Two values - not sufficient. Keep B/C/E.

Step 2: (2) alone: $x > 0$ allows infinite values. Not sufficient.

Step 3: together: $x = 6$ or $x = -6$, and $x > 0$, so $x = 6$. One value - sufficient.

Answer: **C**.

Now the trap version - change statement (2) to "x is an integer":

What is the value of x?

(1) $x^2 = 36$

5. (E) Step 1: (1) alone: m < 50 leaves tens digits 0 through 4 - not sufficient. Keep B/C/E. Step 2: (2) alone: multiples of 7 have every tens digit - not sufficient. Step 3: together, m ∈ {7, 14, 21, 28, 35, 42, 49}. Tens digits: 0, 1, 2, 2, 3, 4, 4. Still not unique - not sufficient. Answer: E. The trap: combining *feels* productive (only 7 candidates left), but sufficiency demands exactly one value. Seven candidates is not one.

6. (E) Step 1: (1) alone: $x > y^2$. Try y = -5, x = 30: x/y = -6, not > 1 (no). Try y = 2, x = 5: x/y = 2.5 > 1 (yes). Both possible - not sufficient. Keep B/C/E. Step 2: (2) alone: y > 0 says nothing about x - not sufficient. Step 3: together, $x > y^2$ and y > 0 give $x/y > y^2/y = y$, so x/y > y > 0. But is x/y > 1? Try y = 0.5, x = 0.3 ($x > y^2 = 0.25$ ✓): x/y = 0.6 < 1 (no). Try y = 2, x = 5: x/y = 2.5 > 1 (yes). Still not definite - not sufficient. Answer: E. The subtle trap: x/y > y looks like progress, but "greater than y" is not "greater than 1" when y itself is below 1.

7. (D) Step 1: (1) alone: n = 5m + 3 means n leaves remainder 3 when divided by 5 - sufficient. Keep A/D. Step 2: (2) alone: n - 3 divisible by 5 means n = 5k + 3 for some integer k - remainder 3 - sufficient. Answer: D. The two statements are the same fact in different clothing; D only asks whether each alone suffices, which both do.

8. (E) Step 1: (1) alone: |x| = 5 → x = 5 or x = -5. Two values - not sufficient. Keep B/C/E. Step 2: (2) alone: $x^2 = 25$ → x = 5 or x = -5. Two values - not sufficient. Step 3: together - still x = 5 or x = -5. The statements are redundant: each says the same thing, so combining adds nothing. Not sufficient. Answer: E. Always check for redundancy at step 3: if statement (2)'s information is contained in statement (1)'s, C is impossible.

9. (C) Step 1: (1) alone: x/y = 3 fixes the ratio but not the values - $xy = 3y^2$ varies with y. Not sufficient. Keep B/C/E. Step 2: (2) alone: x - y = 8 fixes the difference but not the values - not sufficient. Step 3: together, x = 3y and x - y = 8 → 2y = 8 → y = 4, x = 12, xy = 48. Sufficient - and you did not need to compute 48 to know it is uniquely determined. Answer: C.

10. (B) Step 1: (1) alone: area 48 is consistent with many rectangles (6x8, 4x12, 3x16...), each with a different diagonal. Not sufficient. Keep B/C/E. Step 2: (2) alone: a rectangle with length 8 and width 6 has diagonal √(64+36) = √100 = 10 - the familiar 6-8-10 triangle. Sufficient. Answer: B. Recognizing Pythagorean triples (6-8-10, 5-12-13) by sight is a small investment with steady DS returns.

11. (A) Convert targets to thousands: North 800, South 650, East 950. Compute each region's excess: North (880-800)/800 = 10.0% - meets "at least 10%." South (700-650)/650 = 7.7% - below. East (1000-950)/950 = 5.3% - below. Only North earned the bonus. The trap is South at 7.7%: it exceeded its target, but the bonus requires exceeding by *at least 10%*, not merely exceeding. Read the threshold in Tab 1, not just the numbers in Tab 2.

12. (B) East actual 1,000 (thousand) vs. target 950 (thousand): (1000-950)/950 = 50/950 = 5.26%, so the East exceeded its target by 5.3% to the nearest tenth. (D) divides by the wrong base: 50/1,000 = 5.0% measures the gap against the actual, not the target. (C) and (E)