

DATA SUFFICIENCY TUTORIAL

Data Sufficiency Introduction :

Each data sufficiency question consists of 3 parts

- The question
- Statement (1)
- Statement (2)

You are asked to determine which combination of the two statements is necessary and sufficient to answer the question.

Answers A-E answers for data sufficiency problems are always the same.

1. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient
2. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient
3. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient
4. EACH statement ALONE is sufficient
5. Statements (1) and (2) TOGETHER are NOT sufficient

Data sufficiency questions are unlike most of the math questions in that you don't have to answer the question in the first part of the problem, rather you have to work out what information is sufficient to solve the question.

Strategies for Data Sufficiency :

- Learn the answer choice
- Keep the statements separate
- Simplify the question and data
- Avoid unnecessary calculations
- Use a process of elimination
- Data Sufficiency tricks

Learn the answer choices :

The answers A, B, C, D and E are exactly the same for every data sufficiency question.

However they are quite confusing when you first see them. Therefore it is important that you learn the choices so that you do not make the mistake of selecting the answer you want in the real test.

The answers are as follows.

1. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient
2. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient
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Which sounds complicated but there is a simple phrase to help you remember them, '1-2-TEN' which stands for...

- A. 1 alone is sufficient
- B. 2 alone is sufficient
- C. T ogether they are sufficient
- D. E ither is sufficient
- E. N either is sufficient

Keep the statements separate :

When you first start working on data sufficiency problems you will find it very easy to fall into the trap of mixing up the data statements.

To ensure you don't fall into this trap you should tackle every data sufficiency question in the same way.

1. Write 1 & 2 on your notepad
2. Work out whether statement 1 alone is sufficient to answer the question.
3. Mark 1 on your board with a tick or a cross depending on whether you could answer the question with 1 alone.
4. Work out whether statement 2 alone is sufficient to answer the question.
5. Mark 2 on your board with a tick or a cross depending on whether you could answer the question with 2 alone.
6. Then work out which is the appropriate answer using the table below.

Statement 1 Statement 2 Answer

✓	✗	A
✗	✓	B
✓	✓	D

✘

✘

C or E

You can see that in the case where neither statement is sufficient on its own the answer could be C, i.e. both statements together can answer the question, or E, i.e. even with both statements together you cannot answer the question.

Therefore in this case you will need to do some more work out whether the question can be answered with both

Simplify questions and data statements (Re-Phrasing) :

You will find that the question and data statements are sometimes written in a way which deliberately obscures a fairly simple meaning.

In these cases you will find it useful to simplify the statements or question to make it clearer what information you are provided or what the question you are asked is.

This is called Rephrasing. So simply rephrase the given questions and the given data statements.

Consider the below example

If n is a positive integer, is $(\frac{1}{10})^n < 0.001$?

1. $n^3 = 64$
2. $n > 2$

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Simplify the question

The question in this problem can be simplified.

If n is a positive integer, is $(\frac{1}{10})^n < 0.001$?

Firstly we can express both sides of the inequality in similar ways because we know that

$$0.001 = \left(\frac{1}{10}\right)^3$$

So we can write the question as

$$\left(\frac{1}{10}\right)^n < \left(\frac{1}{10}\right)^3$$

But since the bases for both exponents are the same this can be simplified further to just compare the powers.

$$n > 3$$

Simplify the data statements

We can also simplify the first data statement

$$n^3 = 64$$

If we take cube roots of both sides of the equation we get

$$n = 4$$

Statement 2 cannot be simplified further. It is very easy to tackle the question now

Avoid unnecessary calculations :

You are so used to working out the answer in math questions and that when you first start data sufficiency questions it is easy to find yourself doing unnecessary calculations to work out the answers from the data you are given.

In fact if you find yourself doing lots of calculations on a data sufficiency question then you are almost certainly approaching it in the wrong way.

Process of elimination :

If you get stuck on a data sufficiency question then you can often use a process of elimination to give yourself a reasonable chance of getting the questions right anyway.

For example, if you have found that statement 1 is sufficient to answer the question and you are not sure about statement 2 then you can eliminate all the answers except A (1 alone) and D (Either). Even if you guess at this point you have a 50-50 chance of getting the question right.

Similarly, if you have already found that statement 2 is sufficient to answer the question and you are not sure about statement 1 then you can eliminate all the answers except B (2 alone) and D (Either). Again this gives you a 50-50 chance of getting the question right.

On the other hand, if you have found that statement 1 is not sufficient to answer the question and you are not sure about statement 2 then you can eliminate all the answers except B (2 alone), C (Together) and E (Neither). Even if you guess at this point you have a one third chance of getting the question right.

I will leave it as an exercise for you to work out which answers remain if you have already found that statement 2 is not sufficient to answer the question.

Data sufficiency 'Tricks' :

There are lots of tricks or 'gotchas' that are used commonly in GMAT data sufficiency questions to catch you out and you need to learn to spot these.

There are too many of these to list in this tutorial and learning these is a case of trying lots of practice questions.

Once you have reviewed 100 or more practice questions you will become very familiar with these 'gotchas' and you should aim not to fall for the same trick twice.

However, there is one 'gotcha' that is worth covering in this tutorial.

The answer can be no

Although the data statements will never contradict one another, they may sometimes lead to a negative answer.

Lots of beginners get caught out by data sufficiency questions where the answer is no, and mark no against the data statement without thinking.

For example

Is x even?

1. $2x$ is even

2. $x + 1$ is even

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You should be able to see that first statement does not answer the question for you. Even if $2x$ is even, x could still be even or odd. So you can mark statement 1 as 'no'.

The second statement however tells you that x is odd and therefore you know that the answer to the question is no. Be careful here, you may be tempted to mark statement 2 as 'no' but statement 2 has given you enough information to answer the question so you **must** mark it as 'yes'.

Since the second statement answers the question alone and the first statement does not the answer is B.