

answer that explains how *X* and *Y* might both be true at the same time.

## Step 3

### Step 3: Predict What the Answer Should Do

Just as your knowledge of the question type can help you to identify relevant information in a Critical Reasoning passage, your knowledge of the question type can help you to recognize the characteristics of the answer you're looking for.

Predicting the answer to a Critical Reasoning question is often quite difficult. Predicting what the answer should do is usually easier. Before turning to the answers, think about what the correct answer needs to accomplish based on the question type and information in the argument. In this way, you continue to exercise control over a question as you move from information gathering to answer selection.

- **Assumption Questions:** good answers to assumption questions bridge a gap in reasoning between the premises of an argument and its conclusion. For this reason, they often employ words or phrases that appear in the premises, as well as language from the conclusion. A good answer links the author's claim to evidence that supports it, or rules out obstacles to that link.
- **Weaken Questions:** good answers to weaken questions widen a gap in reasoning between the premises of an argument and its conclusion. In order to do so, they often introduce new information that attacks one of the argument's assumptions. A

good answer makes the truth of an author's claim seem less likely by disrupting the link between that claim and the evidence that supports it.

- **Strengthen Questions:** good answers to strengthen questions are very similar to those for assumption questions. That's because both question types require you to find an assumption that supports the argument's conclusion. A good answer will confirm the pivotal assumption or introduce new information that rules out obstacles to it.
- **Inference Questions:** inference questions in the Critical Reasoning format don't really ask you to make an inference beyond the scope of the information provided. It can be difficult to come up with your own answer to an inference question, so let the test writers worry about the phrasing. Simply keep in mind that you want the answer best supported by the facts. An answer that paraphrases a fact from the passage is often the credited response.
- **Resolve/Explain Questions:** passages that accompany resolve/explain questions introduce a pair of facts or ideas that seem to oppose one another. Once you've clarified the apparent conflict, look for answer choices that allow both facts to be true simultaneously. Good answers address both sides of the issue, rather than ignoring one side or the other.
- **Evaluate Questions:** evaluate questions require you to select a test you could perform, or a question you could ask, to assess the validity of an argument. If the answer choices are phrased as questions, try answering each question "Yes" and "No" to see whether different answers change your belief in the argument's conclusion. If so, you're probably dealing with the credited response. Good answers make it possible to determine the truth or falsity of an assumption made in the argument.

- **Identify the Reasoning Questions:** once you've identified the premises and conclusion of an ID the reasoning passage, look for answer choices that accurately describe the relationships between an argument's parts. There's no reason to look for gaps or assumptions; the task is purely descriptive. Keep an eye out for answers that focus on the structure of the argument rather than its content. Good answer choices accurately mirror the argument's structure.
- **Flaw Questions:** good answers to flaw questions accurately reflect the structure of the argument. They describe flaws in reasoning and the correct answer most often articulates a faulty assumption.

## Step 4

### Step 4: Use POE to Find the Answer

This is the last step in the basic approach to Critical Reasoning questions. You've done most of the work required to answer the question. All that remains is to select and confirm your answer. You're already armed with a sense of what the correct answer needs to accomplish. Now, supplement that understanding with an efficient, effective process for weeding out bad answers and avoiding traps—tempting answers that are nevertheless incorrect.

Just as your knowledge of question types can help you find relevant information in a passage and predict what the correct answer should do, it can also help you to narrow your search for the correct answer by enabling you to quickly eliminate answers that are flawed. You've read about the characteristics of good answers. It's time to consider the characteristics of poor answers. Each Critical Reasoning

question type has its own set of attractor answers that you will learn to anticipate. GRE arguments are often quite specific, so read them carefully and interpret them literally. Pay close attention to the language used in arguments and answer choices.



**Assumption questions** ask you for the unstated premise in the argument. Correct answers link conclusions to the premises that support them, so ask how each answer affects the author's claim. When you think you've found the correct answer, apply the **Negation Test**. Negate your preferred answer, and if your belief in the argument's conclusion isn't affected, the answer is incorrect. Avoid answers that:

- Are out of scope
- Use extreme language

**Weaken questions** ask you to select the answer that disrupts the link between the premises and the conclusion. Ask yourself how each choice affects the author's claim. Eliminate answers that:

- Are out of scope
- Use extreme language
- Strengthen the argument

**Strengthen questions** ask you to select the answer that reinforces the link between the premises and the conclusion. Ask yourself how each choice affects the author's claim. Eliminate answers that:

- Are out of scope

- Use extreme language
- Weaken the argument

**Inference questions** ask for the answer choice that follows necessarily from the facts in the passage. The answers to inference questions generally don't stray far from the information provided, so look to eliminate answers that require additional assumptions. Avoid answers that:

- Are out of scope
- Use extreme language

**Resolve/Explain** questions ask for the answer that resolves an apparent conflict between two ideas, or that explains the conflict away. When you consider the answer choices, adhere closely to the opposing ideas. Avoid answers that:

- Are out of scope
- Make the conflict worse
- Address only one side of the conflict

**Evaluate questions** ask you to select the answer that allows the strength or weakness of an argument to be determined. Incorrect answers offer new information that does not connect the argument's conclusion to its premises in a meaningful way. Eliminate answers that:

- Are out of scope

**Identify the reasoning questions** ask you to find the answer that accurately describes the structure of an argument. Avoid answers that:

- Do not match the structure of the argument
- Only partially match the structure

**Flaw questions** ask you to choose the answer that accurately describes a flaw in the structure of an argument. Watch out for answers that describe the argument faithfully, but neglect to mention a flaw. Eliminate answers that:

- Are out of scope
- Cannot be matched to the argument or are only partial matches



**Time Enough At Last**

These strategies may at first take a lot of time, but if you continue to practice them, you'll get faster. Also remember that taking your time isn't a bad thing: working more slowly increases your accuracy, which increases your GRE score!

## CRITICAL REASONING PRACTICE QUESTIONS

Now that you've been introduced to the parts of a GRE argument, the reasoning patterns typical of GRE arguments, and the basic approach to Critical Reasoning questions, it's time to work through some guided example questions and bolster your understanding of the Critical Reasoning question format.

### Assumption Question

Take a look at the following example:



Most people believe that gold and platinum are the most valuable commodities. To the true entrepreneur, however, gold and platinum are less valuable than is the knowledge of

opportunities. Thus, in the world of high finance, information is the most valuable commodity.

The author of the passage above makes which of the following assumptions?

- ☐ Gold and platinum are not the most valuable commodities.
- ☐ Entrepreneurs are not like most people.
- ☐ The value of information is incalculably high.
- ☐ Information about business opportunities is accurate and leads to increased wealth.
- ☐ Only entrepreneurs feel that information is the most valuable commodity.



For the following explanation, we've modeled the proper use of Steps 1, 2, 3, and 4. As you do the following questions, do your best to identify and apply each step of the process.

### Here's How to Crack It

The question asks for the *assumption* made by the author, so this is an assumption question.

## Step 1

An assumption supports the conclusion of an argument, so when you read the passage, look for the conclusion. The word “thus” in

the passage's final sentence gives it away: *in the world of high finance, information is the most valuable commodity.*

## Step 2

Now determine what information in the passage is in support of the conclusion. Two pieces of information are provided in support of the conclusion. One group of people—*most people*—*believe that gold and platinum are the most valuable commodities.* Another group—*true entrepreneurs*—*believe that gold and platinum are less valuable than is the knowledge of opportunities.*

## Step 3

From the opinions of two groups of people, the author concludes that the opinion of one group is to be preferred, but the passage doesn't say why. Therefore, it's likely that the correct answer will explain why the opinion of *the true entrepreneur* is to be preferred. With that in mind, you're ready to attack the answer choices:

- ☐ Gold and platinum are not the most valuable commodities.

## Step 4



This answer appears to support the conclusion. If *gold and platinum are not the most valuable commodities*, there's a chance that *information is*. By itself, however, the idea that gold and platinum *are not* the most valuable commodities doesn't mean information is the most valuable commodity. This assumption provides no reason why the author should agree with *the true entrepreneur*; it doesn't link the argument's premises to its conclusion. Eliminate (A).

☐ Entrepreneurs are not like most people in other careers.

This answer choice doesn't tell you anything you don't already know: if the true entrepreneur doesn't share the opinion of most people, then entrepreneurs aren't like most people (at least not in the way they value commodities). In any case, this answer doesn't provide a reason to favor the opinion of the true entrepreneur. Eliminate (B).

☐ The value of information is incalculably high.

Be wary of the extreme language in this answer choice. The author needn't assume the value of information is incalculable in order to believe that it's the most valuable commodity. Moreover, while the value of many commodities might be incalculable, it doesn't follow from this that information is most valuable. Eliminate (C).

☐ Information about business opportunities is accurate and leads to increased wealth.

This answer links the argument's conclusion to its premises by providing a reason to side with the true entrepreneur. To check whether this assumption is required by the argument, apply the Negation Test. If information *isn't* accurate and *doesn't* lead to increased wealth, it's unclear why the author believes it to be most valuable. Negating this answer disrupts the argument, so keep (D).

- ☐ Only entrepreneurs feel that information is the most valuable commodity.

This answer is out of scope. It doesn't matter *who* believes information to be most valuable. What matters is *why* the author believes it to be most valuable. Eliminate (E).

The correct answer is (D).

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## Weaken Question

Take a look at the following example:

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Given the current economic climate, universal healthcare is an impossibility in the United States. More than half of all U.S. households report feeling overwhelmed by expenses, and many people are struggling to find additional sources of income. Funding such a massive program would require significant tax increases, adding to the financial burden of many individuals. The employer-sponsored healthcare system currently in place keeps taxes low, protecting our nation's economy.

Which of the following, if true, would most weaken the argument above?

- ☐ Many U.S. citizens enjoy sizeable tax breaks for medical expenses.
- ☐ Universal healthcare would reduce the financial burden on employers, resulting in significant job growth and wage increases.
- ☐ A majority of profitable, private health insurers have indicated that they expect to increase their payrolls in the coming quarter.

- Pharmaceutical companies have fewer incentives to innovate new drugs in a universal healthcare system.
- Most U.S. citizens depend on their employers for health coverage and could not afford comparable coverage under the current system.

### **Here's How to Crack It**

The question asks you to *weaken* the argument, so this is a weaken question.

Let's break this argument down into its core components. The author concludes that *universal healthcare is an impossibility in the United States*. Why? Because *Funding such a massive program would require significant tax increases, and more than half of all US households already report feeling overwhelmed by expenses....*

Did you spot the gap in the argument's reasoning? The premises refer to the financial burden faced by Americans and to the costs associated with universal healthcare. The conclusion leaps from the cost of such a system to its impossibility. This shift in language exposes a gap in the author's reasoning. Bridging this gap requires an assumption that links the cost of universal healthcare to its impossibility. We know what the correct answer needs to do, and we have a good idea how it might get done. Let's turn to the answer choices.

- Many US citizens enjoy sizeable tax breaks for medical expenses.

Under the current healthcare system, many people are compensated for medical expenses via tax breaks. However, there's no information about what will happen to these tax breaks under a universal healthcare system. This answer touches on the financial problem mentioned in the premises, but because it doesn't link this problem to the impossibility of instituting universal healthcare, it

can't be used to weaken the argument. This choice is out of scope, so eliminate (A).

- ☐ Universal healthcare would reduce the financial burden on employers, resulting in significant job growth and wage increases.

This answer suggests that universal healthcare might lead to positive financial outcomes. If the benefits of universal healthcare outweigh its costs, then those costs don't contribute to the impossibility of universal healthcare. This choice breaks the link between the cost of universal healthcare and its impossibility, so keep (B).

- ☐ A majority of profitable, private health insurers have indicated that they expect to increase their payrolls in the coming quarter.

Are the plans of private health insurers to increase their payrolls relevant to the argument we identified? No, what private insurers do with their payrolls has no bearing on the argument that universal healthcare is impossible because it's expensive. Choice (C) is out of scope. Eliminate it.

- ☐ Pharmaceutical companies have fewer incentives to innovate in a universal healthcare system.

If drug companies have fewer incentives to innovate, then there's evidence to suggest universal healthcare might be a bad idea. This answer addresses the impossibility of universal healthcare by introducing another reason not to pursue it, but that reason doesn't link the impossibility of universal healthcare to its cost. Eliminate (D).

- ☐ Most US citizens depend on their employers for health coverage and could not afford comparable coverage under the current system.

This answer acknowledges the high cost of healthcare under the current system. However, the argument concerns the cost of instituting a universal healthcare system, not the cost of the current system, which is out of scope. Eliminate (E).

The correct answer is (B).

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Try another weaken question:

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Psychologists have just completed an extensive study of recently divorced parents in order to determine which factors contributed most to the dissolution of the marriage. The researchers found that in a great majority of the cases of failed marriages, the couples ate, on average, fewer than 10 meals per week with each other. From this data, the psychologists have determined that a failure to spend time together during meal times is a major factor leading to divorce.

Which of the following, if true, would cast the most doubt on the researchers' hypothesis?

- ☐ Many couples who have long and successful marriages eat together fewer than ten times per week.
- ☐ Most of the couples in the study who were unable to share meals with each other worked outside of the home.
- ☐ People who lack a regular dining schedule tend to have more disorders and illnesses of the digestive system.
- ☐ Couples in the study who reported that they ate together more than ten times per week also indicated that they tended to perceive their relationships with their spouses as healthy.

- In many cases, people in unhappy marriages tend to express their displeasure by avoiding contact with their partners when possible.

### **Here's How to Crack It**

The question asks you to identify which answer choice *casts the most doubt* on the researchers' hypothesis, so this is a weaken question.

Begin by identifying the conclusion and premise. The conclusion of the argument is *the psychologists have determined that a failure to spend time together during meal times is a major factor leading to divorce*. The premise of the argument is that *researchers found that in a great majority of the cases of failed marriages, the couples ate, on average, fewer than 10 meals per week with each other*.

This argument exhibits a causal reasoning pattern. The standard assumptions of causal reasoning patterns are that there is no other cause and it's not a coincidence. In this case, there is no other cause that links not spending time together during meal times and divorce, and it's not a coincidence that couples who get divorced eat fewer than 10 meals per week with each other. Because this is a weaken question, the correct answer will likely provide evidence that there is another cause for the relationship between not eating together and divorce or that the relationship is a coincidence.

- Many couples who have long and successful marriages eat together fewer than ten times per week.

This answer choice is out of scope. The argument is concerned with divorced couples. This answer choice focuses on married couples. This does not weaken the argument because it could be true that couples in successful marriages and unsuccessful marriages eat together fewer than ten times per week. Eliminate (A).

- ☐ Most of the couples in the study who were unable to share meals with each other worked outside of the home.

This choice is out of scope. Where the couples *worked* does not weaken the argument, as the argument is concerned with how many times the couples ate together and divorce rates. Eliminate (B).

- ☐ People who lack a regular dining schedule tend to have more disorders and illnesses of the digestive system.

The relative health of people's digestive system's is not the focus of the argument, so this answer choice is out of scope. Eliminate (C).

- ☐ Couples in the study who reported that they ate together more than ten times per week also indicated that they tended to perceive their relationships with their spouses as healthy.

This choice concerns *couples...who reported that they ate together more than ten times per week*. This group of people is not the focus of the argument, so this answer choice is out of scope. Eliminate (D).

- ☐ In many cases, people in unhappy marriages tend to express their displeasure by avoiding contact with their partners when possible.

This choice provides an alternative reason why divorced couples infrequently are meals together. If the couples are intentionally avoiding contact with each other because they are unhappy, then they'll end up eating fewer meals together. This casts doubt on the claim that there is a causal relationship between the number of times couples eat together and their likelihood of divorce.

The correct answer (E).



## Strengthen Question

Take a look at the following example:

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It has recently been proposed that we adopt an all-volunteer army. This policy was tried on a limited basis several years ago and was a miserable failure. The level of education of the volunteers was unacceptably low, while levels of drug use and crime soared among army personnel. Can we trust our national defense to a volunteer army? The answer is clearly “No.”

Which of the following statements, if true, provides the most support for the claim that an all-volunteer army should not be implemented?

- ☐ The population’s level of education has risen since the first time an all-volunteer army was tried.
- ☐ The proposal was made by an organization called Citizens for Peace.
- ☐ The first attempt to create a volunteer army was carried out according to the same plan now under proposal and under the same conditions as those that exist today.
- ☐ A volunteer army would be less expensive than an army that relies on the draft.
- ☐ Armies are smaller today than they were when a volunteer army was last proposed.

### Here’s How to Crack It

The question asks for the statement that *provides the most support for the claim*, so this is a strengthen question. Begin by distinguishing the argument’s conclusion from its premises, and then find the assumption.

The conclusion of the argument is easy to identify because it’s stated in the question stem: *an all-volunteer army should not be*



*implemented*. As you read the passage, be on the lookout for premises that support the author's claim.

The author provides only one piece of evidence to suggest that an all-volunteer army shouldn't be implemented: it was *tried on a limited basis several years ago and was a miserable failure*. According to the argument, we shouldn't implement an all-volunteer army now because it didn't work out then. This argument exhibits the analogy pattern; it assumes that the current attempt to institute an all-volunteer army will be like the previous attempt.

Because this is a strengthen question, look for answer choices that suggest the two attempts are similar. The more similar they are, the more likely the current attempt will end in failure, and the easier it is to conclude that we shouldn't implement an all-volunteer army.

- The population's level of education has risen since the first time an all-volunteer army was tried.

This answer choice introduces a difference between the current attempt to implement an all-volunteer army and the past attempt. If the education level of the population increased, there's reason to expect a different result this time around. Rather than strengthen the argument against an all-volunteer army, this answer weakens it. Eliminate (A).

- The proposal was made by an organization called Citizens for Peace.

The identity of the group that made the proposal is out of scope. The relevant question asks whether there's good reason to believe that acting on the proposal will end in failure. Eliminate (B).

- The first attempt to create a volunteer army was carried out according to the same plan now under proposal and under the same conditions as those that exist today.

Eureka! This answer introduces a relevant similarity between the two attempts to institute an all-volunteer army. If the last attempt ended in disaster, and the current attempt follows the same plan under the same conditions, there's reason to believe the outcome will be similar. Choice (C) strengthens the argument against an all-volunteer army, so keep it.

- ☐ A volunteer army would be less expensive than an army that relies on the draft.

The cost of a volunteer army is out of scope. The argument concerns the trustworthiness of such an army, not its cost. Eliminate (D).

- ☐ Armies are smaller today than they were when a volunteer army was last proposed.

Like (A), (E) introduces a dissimilarity between the two attempts to institute a volunteer army. For that reason, it's unlikely to be the correct answer. More importantly, like (B) and (D), it's out of scope. It doesn't matter how big the army is or was, but whether it's staffed by trustworthy people or criminals. Eliminate (E).

The correct answer is (C).

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Try another strengthen question:

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Several companies have recently switched at least partially from memos written by hand on printer paper to memos written on a computer and sent electronically with no use of paper at all. Therefore, less printer paper will be used as a result of these changes than would have been used if these companies had continued to use handwritten memos.

Which of the following, if true, most strengthens the argument above?

- ☐ Many of the companies that have switched to electronic memos have increased the number of memos sent.
- ☐ More printer paper was used to create manuals for the use of electronic memos than was used to write handwritten memos.
- ☐ Companies that used more printer paper were more likely to switch to electronic memos than companies that used less printer paper.
- ☐ Some of the industries that have switched at least partially to electronic memos still primarily use printer paper for other operations.
- ☐ The amount of printer paper needed to explain the electronic memos is less than the amount that would have been used for handwritten memos.

### **Here's How to Crack It**

The question asks which of the answer choices *most strengthens the argument*, so this is a strengthen question. Begin by distinguishing the argument's conclusion from its premises, and then find the assumption.

The conclusion of the argument is that *less printer paper will be used as a result of these changes than would have been used if these companies had continued to use handwritten memos*. The changes referenced by the conclusion are defined in the premise of the argument that companies *switched...from memos written...on printer paper to memos written on a computer and sent electronically with no use of paper*. The argument concludes that because of these changes, less printer paper will be used. The assumption of this argument is that the introduction of the new process does not result in increased use of paper for any other

reason. Put another way, there are no unintended consequences of the decision.

Because this is a strengthen question, look for an answer choice that eliminates a possible reason the electronic memo system does not result in less printer paper being used.

- ☐ Many of the companies that have switched to electronic memos have increased the number of memos sent.

The number of memos sent electronically is out of scope. The number of memos sent by companies that have switched to the electronic system does not address a reason that less printer paper is being used. Eliminate (A).

- ☐ More printer paper was used to create manuals for the use of electronic memos than was used to write handwritten memos.

If more printer paper was used to create manuals to explain how to use the electronic memos than would have been used to write handwritten memos, then the changes did not have the intended effect. This weakens the argument. Eliminate (B).

- ☐ Companies that used more printer paper were more likely to switch to electronic memos than companies that used less printer paper.

At first glance, this appears to be a good answer, but this choice does not address whether the electronic memos caused less printer paper to be used. Therefore, this choice is out of scope. Eliminate (C).

- ☐ Some of the industries that have switched at least partially to electronic memos still primarily use printer paper for other operations.

This choice does not impact the argument because the use of printer paper for other operations does not give any information regarding whether the use of electronic memos decreased the amount of printer paper used. Eliminate (D).

- ☐ The amount of printer paper needed to explain the electronic memos is less than the amount that would have been used for handwritten memos.

This choice provides information to suggest that less printer paper is used to create the electronic system than would have been used to write memos, so a company that adopts the electronic memo system uses less printer paper. This choice strengthens the argument. Keep (E).

The correct answer is (E).

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## **Inference Question**

Take a look at the following example:

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In film and television, it's possible to induce viewers to project their feelings onto characters on the screen. In one study, a camera shot of a woman's face was preceded by images of a baby. The audience thought the woman's face registered contentment. When the same woman's face was preceded by images of a shark attack, the audience thought the woman's face registered fear. Television news teams must be careful to avoid such manipulation of their viewers.

Which of the following is best supported by the information in the passage?

- ☐ Television news teams have abused their position of trust in the past.
- ☐ The expression on the woman's face was, in actuality, blank.
- ☐ Images of a baby engendered feelings of happiness in the audience.
- ☐ Audiences should strive to be less gullible.
- ☐ The technique for manipulating audiences described in the passage would also work in a radio program that played dramatic music.

### Here's How to Crack It

The question asks for the answer *best supported by the information in the passage*. The direction of support is from the passage to the answer choices, so this is an inference question. Begin by getting clear on the facts.

**Fact 1:** *In film and television, it's possible to induce viewers to project their feelings onto characters on the screen.*

**Fact 2:** *In one study, a camera shot of a woman's face was preceded by images of a baby. The audience thought the woman's face registered contentment.*

**Fact 3:** *When the same woman's face was preceded by images of a shark attack, the audience thought the woman's face registered fear.*

Once you're clear on the facts, look for the answer that must be true on their basis. Be wary of extreme language and eliminate answers that are beyond the scope of the information provided. The correct answer is likely to paraphrase information in the passage.

- ☐ Television news teams have abused their position of trust in the past.

This answer goes well beyond the scope of the passage. We have no idea what news teams did in the past based on the information provided. Eliminate (A).

- ☐ The expression on the woman's face was, in actuality, blank.

Like the previous choice, this answer is out of scope. Based on the information provided, we simply don't know whether the woman's face was expressionless. Eliminate (B).

- ☐ Images of a baby engendered feelings of happiness in the audience.

Images of a baby led the audience to believe the woman's face registered contentment. If audience members projected their feelings onto the woman, then audience members must have experienced contentment, and it's likely the images of a baby were responsible. Keep (C).

- ☐ Audiences should strive to be less gullible.

Of course, we should all strive to be less gullible, but we know that simply because we know what "gullible" means, not because of the information provided. Nothing in the passage suggests that audience members were gullible. Eliminate (D).

- ☐ The technique for manipulating audiences described in the passage would also work in a radio program that played dramatic music.

It's possible that the information in this answer choice is true, but possible isn't good enough. We need an answer that *must be* true, and the passage provides no information about the projection of emotion in the medium of sound. Eliminate (E).

The correct answer is (C).

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Try another inference question:

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The Mayville Fire Department always fills its employment vacancies “in-house”—when a firefighter retires or leaves the force, his or her position is filled by interviewing all qualified members of the Mayville Department who are interested in the position. Only if this process fails to produce a qualified candidate does the department begin interviewing potential employees from outside the department. This year, the Mayville Fire Department has hired three new firefighters from outside the department.

If the statements above are true, which of the following must also be true?

- ☐ For the coming year, the Mayville Fire Department will be understaffed unless it hires three additional firefighters.
- ☐ Firefighters hired from outside the Mayville Fire Department take longer to properly train for the job.
- ☐ At the time of the vacancies in the Mayville Fire Department, either there were no qualified in-house candidates or no qualified in-house candidates were interested in the open positions.
- ☐ The three firefighters who left the department had jobs for which no other members of the Mayville Fire Department were qualified to fill.
- ☐ The three new firefighters are the first new employees hired by the Mayville Fire Department.

### **Here's How to Crack It**

This question asks which of the answer choices *must be true*, so this is an inference question.



For inference question, there is no need to identify the conclusion and premise of the argument. Instead, be sure to understand what the argument states. The argument states that *when a firefighter retires or leaves the force* [from the Mayville Fire Department], *his or her position is filled by interviewing all qualified members of the Mayville Department who are interested in the position*. The argument then goes on to state that if the process of interviewing internal candidates fails *does the department begin interviewing potential employees from outside the department*. Finally, the argument reveals that *the Mayville Fire Department has hired three new firefighters from outside the department*.

Evaluate the answer choices, looking for one that must be true based on the facts in the argument.

- ☐ For the coming year, the Mayville Fire Department will be understaffed unless it hires three additional firefighters.

This is out of scope. The passage provides no information to suggest that the department needs to hire three additional firefighters. The passage only states that the department has hired three new firefighters from outside the department. Eliminate (A).

- ☐ Firefighters hired from outside the Mayville Fire Department take longer to properly train for the job.

This is out of scope. The passage provides no information about the amount of time it takes to train a firefighter for the Mayville Fire Department. Eliminate (B).

- ☐ At the time of the vacancies in the Mayville Fire Department, either there were no qualified in-house candidates or no qualified in-house candidates were interested in the open positions.

This answer can be properly inferred based on the information in the passage. Because the department hired three candidates from

outside the department, and they only hire candidates from outside the department if there are no qualified people inside the department who are interested in the position, then there must have been no qualified people from the Mayville department who wanted the job. Keep (C).

- The three firefighters who left the department had jobs for which no other members of the Mayville Fire Department were qualified to fill.

The reason the firefighters left the Mayville department is out of scope. The passage is not concerned with why the firefighters left the department, only with the process to replace the ones that do leave. Eliminate (D).

- The three new firefighters are the first new employees hired by the Mayville Fire Department.

This choice is out of scope. There is no way to determine if the three new firefighters are the first new employees hired by the Mayville Fire Department from the information in the argument. Eliminate (E).

The correct answer is (C).

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## **Resolve/Explain Question**

Take a look at the following example:

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In 2008, the world's airlines reported an increase in the total number of passengers carried, but a decrease in total revenues, even though prices for airline tickets on all routes remained unchanged from the year before.

Which of the following resolves the paradox described above?

- ☐ The airline industry was a victim of the recession in 2008.
- ☐ Total passenger miles were up in 2008.
- ☐ Fuel costs remained constant from 2007 to 2008.
- ☐ Passengers traveled shorter distances on less expensive flights in 2008.
- ☐ No new aircraft were purchased by any carrier in 2008.

### **Here's How to Crack It**

The question asks for the answer that *resolves the paradox*, so this is a resolve/explain question. Your knowledge of question types suggests that the accompanying passage will present two pieces of information that seem to be in conflict. State that opposition as clearly as possible.

**Fact 1:** *On the one hand, more passengers traveled by air.*

**Fact 2:** *On the other, airline revenues decreased, even though ticket prices remained unchanged.*

The correct answer to a resolve/explain question will allow both pieces of information to be true simultaneously. Eliminate answers that are out of scope, address only one side of the conflict, or make the conflict worse.

- ☐ The airline industry was a victim of the recession in 2008.

A recession might account for the decrease in revenue, but if ticket prices remained the same, it's unclear how the number of passengers could have increased. Choice (A) addresses only one side of the conflict, so eliminate it.

- ☐ Total passenger miles were up in 2008.

If passengers flew farther in 2008 and ticket prices remained the same, it's unclear how revenues could have decreased. Like (A), this answer addresses only one side of the conflict. Eliminate (B).

☐ Fuel costs remained constant from 2007 to 2008.

Fuel costs are out of scope. An increase in fuel costs might have affected airline profits, but profits are not revenues. This answer has no bearing on either side of the conflict. Eliminate (C).

☐ Passengers traveled shorter distances on less expensive flights in 2008.

This answer looks promising. If the increase in passengers was offset by passengers taking cheaper flights, then revenues could have decreased even as the number of passengers increased. Keep (D).

☐ No new aircraft were purchased by any carrier in 2008.

New aircraft are out of scope. The purchase of new aircraft might have affected airline profits, but if no new aircraft were purchased, then new aircraft affected neither profits nor revenues, and this answer has no relevance at all. Eliminate (E).

The correct answer is (D).

---

Try another resolve/explain question:

---

Over the past ten years, the emergence of digital file sharing technology has threatened the traditional market for entire music albums. Internet users are now able to download single songs from their favorite artists, enabling them to acquire the

songs they desire without having to purchase the entire album. Some music industry leaders contend that this practice causes untold financial losses, as the cost of individual songs is not enough to offset the money lost producing the songs that were not purchased from the rest of the album. However, consumer groups report that there has been an increase in the sales of entire music albums.

Which of the following, if true, would best explain the situation above?

- ☐ Some consumers who have illegally downloaded songs from the Internet have been sued by major record companies.
- ☐ Research indicates that persons who engage in file-sharing or song-downloading are usually only casual music fans.
- ☐ The music industry is developing new technology to help prevent users from illegally downloading songs.
- ☐ Music artists tend to release more material today, on average, than they did 10 years ago.
- ☐ Entire music albums released now often include bonus features that are appealing to fans, such as interviews with the band and music videos, that are not available unless the entire album is purchased.

### **Here's How to Crack It**

The question asks which of the answer choices *best explains the situation above*, so this is a resolve/explain passage.

For resolve/explain passages, look for two facts presented in the passage that are in conflict.

**Fact 1:** *Internet users are now able to download single songs from their favorite artists, enabling them to acquire the songs they desire without having to purchase the entire album.*

**Fact 2:** *consumer groups report that there has been an increase in the sales of entire music albums.*

The correct answer will explain the apparent discrepancy between these two facts.

- ☐ Some consumers who have illegally downloaded songs from the Internet have been sued by major record companies.

This choice is out of scope. Major record companies suing consumers who have illegally downloaded songs does not explain the discrepancy between the ability to download single songs and the increase in sales of entire music albums. Eliminate (A).

- ☐ Research indicates that persons who engage in file-sharing or song-downloading are usually only casual music fans.

This is out of scope. The degree of a downloader's fandom does nothing to explain the discrepancy in the argument. Eliminate (B).

- ☐ The music industry is developing new technology to help prevent users from illegally downloading songs.

Choice (C) does not explain the increase in entire album sales, so this addresses only one side of the conflict. Eliminate (C).

- ☐ Music artists tend to release more material today, on average, than they did 10 years ago.

This choice adequately addresses one side of the conflict, as artists releasing more material could explain the increase in album sales. However, this does not address the paradox in the argument, so eliminate (D).

- ☐ Entire music albums released now often include bonus features that are appealing to fans, such as interviews with

the band and music videos, that are not available unless the entire album is purchased.

This choice states that entire music albums feature bonus material that is not available unless the entire album is purchased. This could explain both the fact that people are downloading individual songs and that entire music album sales are increasing.

The correct answer is (E).

---

## Evaluate Question

Take a look at the following example:

---

During a period of low growth after a recent and remarkable boom in the solar energy sector, Company X, a major manufacturer of solar-powered generators, attributed its success during the boom to the sale of excess inventory it had discovered in one of its warehouses.

Which of the following tests would most help to evaluate the company's hypothesis as to the cause of its success?

- ☐ Comparing the length of the low-growth period to the length of the preceding boom
- ☐ Comparing the boom experienced by Company X to those experienced by similarly sized manufacturers of solar-powered generators that did not have inventory on hand
- ☐ Calculating average sales increases within the individual divisions of Company X
- ☐ Comparing the total number of generators sold by Company X during the boom to the total number sold by Company X during the period of low growth

- Using economic theory to predict the next economic boom for Company X

### **Here's How to Crack It**

The question asks for the test that would most help to *evaluate* the company's hypothesis, so this is an evaluate question. According to the question stem, the hypothesis concerns the cause of Company X's success. As you begin to work the argument, look for claims that provide a reason Company X succeeded.

The passage's final sentence states that Company X *attributed its success during the boom to the sale of excess inventory*, but how does Company X come to believe that? The only other piece of information we get from the passage is that there was a *boom in the solar energy sector*, followed by a *period of low growth*.

Without additional information, it's unclear how changes in the solar energy sector relate to the company's claim about its own success. However, if you noticed the word *cause* in the question stem, then you probably recognized that Company X makes a causal argument.

Take advantage of the causal reasoning pattern by recalling its standard assumptions: there's no other cause, and it's not a coincidence. The former assumption seems more relevant here, because Company X assumes the sale of excess inventory alone was responsible for its success.

Evaluate the answer choices one at a time, looking for the test that would allow you to determine whether there isn't another reason for Company X's success.

- Comparing the length of the low-growth period to the length of the preceding boom

Executing this comparison would tell us how long each of the periods lasted, but connecting that information to the sale of excess



inventory would require inferences beyond the scope of the information provided. Eliminate (A).

- Comparing the boom experienced by Company X to those experienced by similarly-sized manufacturers of solar-powered generators that did not have inventory on hand

This answer choice is tempting. We're looking for a way to determine whether something other than the sale of excess inventory might have caused Company X's success. If competitors without excess inventory to sell experienced booms comparable to that of Company X, then the company's claim might be incorrect. On the other hand, if competitors didn't experience as big a boom, it appears more likely that the sale of excess inventory was responsible for Company X's success. Keep (B).

- Calculating average sales increases within the individual divisions of Company X

Individual divisions of Company X are out of scope. We already know that the company sold excess inventory; which divisions saw sales increases is irrelevant. Eliminate (C).

- Comparing the total number of generators sold by Company X during the boom to the total number sold by Company X during the period of low growth

At first glance, this answer choice looks appealing. The comparison described here would allow us to determine how many generators were sold during each period. If more generators were sold during the boom than during the low-growth period, it might seem as though Company X's success during the boom resulted from the sale of excess inventory. However, the passage states that the period of low growth *followed* the boom. If more generators were sold during the boom, then at best, we could infer that a *decline* in sales led to *decreased* success. To determine whether the sale of excess inventory *caused* Company X's success during the boom, we'd need

sales numbers from the period *before* the boom, not the period *after* it. Eliminate (D).

- ☐ Using economic theory to predict when the next economic boom for Company X will occur

Of the five answer choices, this one is most obviously out of scope. An estimate of the time that will elapse before the next boom needn't have any relevance to the cause of the last boom. Eliminate (E).

The correct answer is (B).

---

## Identify the Reasoning Question

Take a look at the following example:

---

Although measuring the productivity of outside consultants is a complex endeavor, **Company K, which relies heavily on consultants, must find ways to assess the performance of these workers.** The risks to a company that does not review the productivity of its human resources are simply too great. **Last year, Company L was forced into receivership after its productivity declined for three consecutive quarters.**

The bolded clauses play which of the following roles in the argument above?

- ☐ The first bolded clause states the author's conclusion, and the second introduces unrelated information.
- ☐ The first bolded clause provides background information, and the second offers evidence to contradict that information.

- The first bolded clause states one of the author's premises, while the second states the author's conclusion.
- The first bolded clause expresses a position, and the second warns against the adoption of that position.
- The first bolded clause represents the author's conclusion, and the second supports the conclusion with an analogy.

### **Here's How to Crack It**

The bolded clauses in the passage immediately indicate that this is an ID the reasoning question, so begin by distinguishing the argument's conclusion from the premises that support it. Don't worry about finding assumptions.

The phrase *must find ways to assess* is strong language, making the first bolded phrase a good candidate for the argument's conclusion. Why must Company K find ways to assess the performance of its outside consultants? Because companies that don't review the productivity of human resources face risks—just look at Company L! Both of the passage's remaining sentences operate in support of the first bolded phrase. The second bolded clause supports the conclusion by offering the example of a company that was *forced into receivership after its productivity declined*.

Now that you've got a good sense of the argument's structure, look for the answer that correctly mirrors it.

- The first bolded clause states the author's conclusion, and the second introduces unrelated information.

The first part of this answer looks good, because the first bolded clause *does* state the author's conclusion. However, the second bolded clause supports the conclusion; it does not introduce unrelated information. Choice (A) only partially matches the argument's structure, so eliminate it.

- The first bolded clause provides background information, and the second offers evidence to contradict that information.

Part of the first bolded clause states that Company K *relies heavily on consultants*, which does resemble background information. However, nothing in the second bolded clause contradicts that information. Choice (B) is a partial match. Eliminate it.

- The first bolded clause states one of the author's premises, while the second states the author's conclusion.

This answer choice reverses the roles played by the bolded clauses. Since it doesn't match the structure of the argument, eliminate (C).

- The first bolded clause expresses a position, and the second warns against the adoption of that position.

Like (A) and (B), (D) is a partial match. The first bolded clause expresses a position, but the second doesn't warn against the adoption of that position. Eliminate (D).

- The first bolded clause represents the author's conclusion, and the second supports the conclusion with an analogy.

This answer accurately reflects the relationship between the bolded clauses: the first is the author's conclusion, and the second supports the conclusion by offering the example of analogous Company L. Keep (E).

The correct answer is (E).



## Flaw Question

Take a look at the following example:

---

A telephone poll conducted in two states asked respondents whether their homes were cold during the winter months. Ninety-nine percent of respondents said their houses were always warm during the winter. The pollsters published their findings, concluding that ninety-nine percent of all homes in the United States have adequate heating.

Which of the following most accurately describes a questionable technique employed by the pollsters in drawing their conclusion?

- ☐ The poll wrongly ascribes the underlying causes of the problem.
- ☐ The poll assumes conditions in the two states are representative of the entire country.
- ☐ The pollsters conducted the poll by telephone, thereby relying on the veracity of respondents.
- ☐ The pollsters didn't visit respondents' houses in person, so no measure of the temperature in a subject's home was actually made.
- ☐ The pollsters never defined the term "cold" in terms of a specific temperature.

### **Here's How to Crack It**

The question asks for a *questionable technique* used by the pollsters, so this is a flaw question.

You already know from the question stem that the argument has a serious problem. Your job is to figure out what that problem is. Begin by identifying the argument's premises and conclusion. Then, use a gap in the reasoning to hone in on the assumption. Because this is a flaw question, be on the lookout for common reasoning patterns.

The word *concluding* in the last sentence of the passage gives away the conclusion: *ninety-nine percent of all homes in the United States have adequate heating*. Why did the pollsters conclude this? Their findings were based on the results of *a telephone poll conducted in two states*, in which *ninety-nine percent of respondents said their houses were always warm during the winter*.

Did you recognize the pattern of reasoning in this argument? Information about one group of people (the poll was conducted in two states) is used to make a claim about a much larger group (all households in the United States). This argument employs the sampling pattern. The standard assumption involved in the sampling pattern is that the sample is representative of the larger population. Look for answers that call attention to this assumption.

- ☐ The poll wrongly ascribes the underlying causes of a problem.

Underlying causes are out of scope. The pollsters ask whether people's homes are cold. The reason they might be cold is irrelevant. Eliminate (A).

- ☐ The poll assumes conditions in the two states are representative of the entire country.

This answer expresses the standard assumption involved in the sampling pattern. Nothing in the passage suggests that the households surveyed are representative of U.S. householders in general. Keep (B).

- ☐ The pollsters conducted the poll by telephone, thereby relying on the veracity of respondents.

The information in this answer might betray a weakness in the pollsters' methodology, but it isn't a weakness in the pollsters' reasoning. Eliminate (C).

- The pollsters didn't visit respondents' houses in person, so no measurement of the temperature in a subject's home was actually made.

Like (C), this answer describes a problem with the poll, not with the argument. Eliminate (D).

- The pollsters never defined the term "cold" in terms of a specific temperature.

It's true that the pollsters never defined the term "cold," but does that represent a flaw in the pollsters' reasoning? The flaw identified here concerns the poll itself, not the argument. Eliminate (E).

The correct answer is (B).



Now that you know how to identify and approach each of the eight Critical Reasoning question types, the best way to proceed is to practice. The more you experience through preparation, the less likely you are to be surprised on test day.

As you complete Critical Reasoning drills and exercises, force yourself to follow the basic approach. Your knowledge of the question type informs every step of the basic approach to Critical Reasoning questions, from reading the passage to eliminating incorrect answers, so always read the question first. Memorize the common reasoning patterns and the assumptions that go with them, develop a familiarity with the characteristics of good and bad answers, and you'll be well on your way to mastering the Critical Reasoning format.

# Critical Reasoning Practice Set

*[Click here](#) to download a PDF of Critical Reasoning Practice Set.*

In this practice set, follow the steps exactly as we have presented them. Answers can be found in Part V.

1 of 5

In 1989, corporate tax rates in some regions of the United States fell to their lowest level in 15 years, while the rates in other regions reached new highs. In 1974, similar conditions led to a large flight of companies from regions with unfavorable corporate tax policies to regions with favorable policies. There was, however, considerably less corporate flight in 1989.

Which of the following, if true about 1989, most plausibly accounts for the finding that there was less corporate flight in 1989 ?

- ☐ The regions with the most favorable corporate tax policies had many of the same types of corporations as did those with unfavorable tax policies, but this was not true in 1974.
- ☐ In contrast to 1974, office rental costs in the regions with the most favorable corporate tax policies were significantly higher than rental costs in other areas of the country.
- ☐ In contrast to 1974, in 1989, the areas with the most favorable corporate tax policies reaped the most benefit from tax incentives, although the tax codes were particularly difficult to decipher.
- ☐ Tax incentives offered by foreign countries were higher in 1989 than in 1974.
- ☐ Individual tax incentives in the areas with favorable corporate tax policies were slightly lower than they were 15 years earlier in areas with favorable corporate tax policies.



2 of 5

Aramayo: Our federal government seems to function most efficiently when decision-making responsibilities are handled by only a few individuals. Therefore, our government should consolidate its leadership and move away from a decentralized representative democracy.

Tello: But moving our government in this direction could violate our constitutional mission to provide government of, for, and by the people.

Which of the following statements describes Tello's response to Aramayo?

- ☐ Tello contradicts the reasoning used by Aramayo.
- ☐ Tello uncovers an assumption used in Aramayo's reasoning.
- ☐ Tello brings up a possible negative consequence of accepting Aramayo's argument.
- ☐ Tello reveals the circular reasoning used by Aramayo.
- ☐ Tello shows that Aramayo overgeneralizes a very special situation.

3 of 5

Business computer systems are designed to make workers more productive by automating a portion of the work that must be completed in a business process. As a result, the employee is free to perform more tasks that require human attention. Although productivity may be lost during a learning period, many businesses experience dramatic gains in productivity after installing a new computer system. While discussing the connection between productivity gains and computer systems, a well-respected business journal recently stated that the person who serves as the Chief Information Officer is the consummate business computer system.

By comparing a Chief Information Officer to business computer systems, the journal implicitly argues that

- ☐ Chief Information Officers should always communicate the value of computer systems to their companies
- ☐ the productivity of a company can be increased through the hiring of a Chief Information Officer
- ☐ many companies have not improved their productivity with new computer systems
- ☐ Chief Information Officers are more effective than are new computer systems
- ☐ the impact of a Chief Information Officer on a company's productivity is difficult to measure

4 of 5

Whenever Joe does his laundry at the Main Street Laundromat, the loads turn out cleaner than they do when he does his laundry at the Elm Street Laundromat. Laundry done at the Main Street Laundromat is cleaner because the machines at the Main Street Laundromat use more water per load than do those at the Elm Street Laundromat.

Which of the following statements, if true, helps support the conclusion above?

- ☐ The clothes washed at the Elm Street Laundromat were, overall, less clean than those washed at the Main Street Laundromat.
- ☐ Joe uses the same detergent at both laundromats.
- ☐ The machines at the Oak Street Laundromat use twice as much water as do those at the Main Street Laundromat.
- ☐ Joe does three times as much laundry at the Main Street Laundromat as he does at the Elm Street Laundromat.
- ☐ Joe tends to do his dirtier laundry at the Elm Street Laundromat.

5 of 5

According to the United States Postal Service bureau of information, the rate of complaints concerning late delivery was 30 times higher in 1991 than in 1964. Because the United States Postal Service changed neighborhood routes from a multiple-truck delivery system to a single-truck delivery system between 1964 and 1991, the enormous increase in complaints must be a result of this systematic change.

Which of the following, if true, weakens the conclusion drawn above?

- ☐ In 1991, most late-mail complaints were reported to the appropriate United States Postal Service office, whereas in 1964 most were not.
- ☐ Even in a multiple-truck delivery system, certain letters will arrive late.
- ☐ According to the United States Postal Service bureau of information, most of the complaints concerning late delivery in 1991 were about registered mail.
- ☐ The bulk amount of mail processed by the United States Postal Service was not much larger in 1991 than it was in 1964, before the systemic change occurred.
- ☐ The change in neighborhood routes from a multiple-truck to a single-truck delivery system sometimes causes enormous increase in the price of stamps.

# Summary

- Most Critical Reasoning questions require you to break down an argument. The conclusion is the main point of an argument. The premise is the fact cited in support of the conclusion.
- The assumption is used to link the premise and the conclusion with each other. Without an assumption, an argument breaks down.
- To crack a Critical Reasoning question, make sure to follow the steps of the basic approach:
  - Identify the Question
  - Work the Argument
  - Predict What the Answer Should Do
  - POE to Find the Answer
- After reading the question, break down the argument into its premise and conclusion and, if necessary, the assumption.
- Keep an eye out for common reasoning patterns and the standard assumptions of each.

# Chapter 8

## Vocabulary for the GRE

Words, words, words. That's what you'll find in this chapter. The following pages contain the Key Terms List, a list of some of the most common words that appear on the GRE. There are also some handy tips on studying and learning new vocabulary words and exercises to test your progress. Be advised, though, that the words in the chapter ahead are just a starting point. As you prepare for your GRE, keep your eyes open for words you don't know and look them up!

## VOCAB, VOCAB, VOCAB

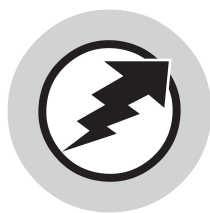
As much as ETS would like to claim that the GRE doesn't rely much on vocabulary, the simple fact remains that many of the questions, answer choices, and reading passages contain some difficult vocabulary. You can't improve your score substantially without increasing your vocabulary. You might think that studying vocabulary is the most boring part of preparing for the GRE, but it's one of the most important, and it's also the one part of GRE preparation that's actually useful to you beyond the confines of the test itself. And the more words that you recognize (and know the meaning of) on the test, the easier it will be. So there's no avoiding the importance of vocabulary to your success on the GRE. Unfortunately, it is virtually impossible to fairly test someone's vocabulary on a standardized test. If you memorize 1,000 words and on test day none of those words appear, does that mean you have a bad vocabulary? Of course not—it just means that you've been victimized by the limitations of standardized testing.

This doesn't mean that you should take a defeatist attitude toward learning vocabulary! Even if you have only a few weeks before your test, you can still expand your vocabulary and increase your prospects of doing better on the GRE. One thing you have working in your favor is the fact that ETS loves to do the same things over and over. The words we've collected for you in this chapter are the words that appear most frequently on the GRE. So let's get started learning some new words!

Improving your vocabulary is one of the most important things you can do to improve your Verbal score.

## LEARN TO LOVE THE DICTIONARY

Get used to looking up words. ETS uses words that it believes the average college-educated adult should know. These words show up in newspaper and magazine articles, in books, and in textbooks. If you see a word you don't know while studying for the GRE or elsewhere, it's probably a good GRE word. Look it up and make a flash card. Dictionaries will give you the pronunciation, while digital apps can provide quick, handy look-ups for new words. Looking up words is a habit. You may have to force yourself to do it in the beginning, but it becomes more natural over time. Many of the techniques in this book will help you on the GRE but don't have much relevance in day-to-day life, but a great vocabulary and good vocabulary habits will add a tremendous amount of value to your graduate school career and beyond.



**Flashcards from Us**

You can make your own flashcards or you can buy  
Essential GRE Vocabulary flashcards from us!

## Learning New Words

How will you remember all the new words you should learn for the test? By developing a routine for learning new words. Here are some tips.

- To learn words that you find on your own, get into the habit of reading good books, magazines, and newspapers. Start paying attention to words you come across for which you don't know the definition. You might be tempted to just skip these, as usual, but train yourself to write them down and look them up.
- When you look up the word, say it out loud, being careful to pronounce it correctly. This will help you remember it.

- When you look up a word in the dictionary, don't assume that the first definition is the only one you need to know. The first definition may be an archaic one, or one that applies only in a particular context, so scan through all the definitions.

Learn new words little by little; don't try to learn a ton at once!

- Now that you've learned the dictionary's definition of a new word, restate it in your own words. You'll find it much easier to remember a word's meaning if you make it your own.
- Mnemonics—Use your imagination to create a mental image to fix the new word in your mind. For example, if you're trying to remember the word *voracious*, which means having an insatiable appetite for an activity or pursuit, picture an incredibly hungry boar, eating huge piles of food. The voracious boar will help you to recall the meaning of the word. The crazier the image, the better.
- Keep a vocabulary notebook, or make a file with a list of new vocabulary words and put it on your desktop. Simply having a notebook with you will remind you to be on the lookout for new words, and using it will help you to remember the ones you encounter. Writing something down also makes it easier to memorize. Jot down the word when you find it, note its pronunciation and definition (in your own words) when you look it up, and jot down your mnemonic or mental image. You might also copy the sentence in which you originally found the word, to remind yourself of how the word looks in context.
- Do the same thing with flash cards. Write the word on one side and the pronunciation, the meaning, and perhaps a mental image on the other. Stick five or six of your flash cards in your pocket every morning and use them whenever you can. Stuck on a delayed subway train? Look at your flashcards. Standing in a long line at the bank? Look at your flashcards. Sick of engaging



in small talk with boring acquaintances? Look at your flashcards. (Only kidding about that last one.)

- Use your new word every chance you get. Make it part of your life. Insert it into your speech at every opportunity. Developing a powerful vocabulary requires lots of exercise.
- Learn word roots. Many words share similar origins. By learning these common roots, you'll be better able to work with words you've never seen before. A good dictionary should list the origin and roots of the words in it.

## **THE KEY TERMS LIST**

You should start your vocabulary work by studying the Key Terms List, a list we've compiled of some of the most frequently tested words on the GRE. We put together this list by analyzing released GREs and keeping tabs on the test to make sure that these words are still popular with ETS. At the very least, answer choices that contain Key Terms make very good guesses on questions for which you don't know the answer. Each word on the Key Terms List is followed by the part of speech and a brief definition for the word. Some of the words on this list may have other definitions as well, but the definitions we have given are the ones most likely to appear on the GRE.

We've broken the Key Terms List down into four groups of about 75 words each. Don't try to learn all four groups of words at once—work with one list at a time. Write the words and their definitions down in a notebook or on flash cards. It is very important to write them down yourself, because this will help you remember them. Just glancing through the lists printed in this book won't be nearly as effective. Before doing the exercises for each group, spend some time studying and learning the words first. Then use the exercises as a way to test yourself. Answers for the matching exercises appear in Part V of this book.

## Key Terms Group 1

**aberrant** (adj.) deviating from the norm (noun form: *aberration*)

**abscond** (verb) to depart clandestinely; to steal off and hide

**alacrity** (noun) eager and enthusiastic willingness

**anomaly** (noun) deviation from the normal order, form, or rule;  
abnormality (adj. form: *anomalous*)

**approbation** (noun) an expression of approval or praise

**arduous** (adj.) strenuous, taxing; requiring significant effort

**assuage** (verb) to ease or lessen; to appease or pacify

**audacious** (adj.) daring and fearless; recklessly bold (noun form: *audacity*)

**austere** (adj.) without adornment; bare; severely simple; ascetic  
(noun form: *austerity*)

**axiomatic** (adj.) taken as a given; possessing self-evident truth  
(noun form: *axiom*)

**canonical** (adj.) following or in agreement with accepted,  
traditional standards (noun form: *canon*)

**capricious** (adj.) inclined to change one's mind impulsively;  
erratic, unpredictable

**censure** (verb) to criticize severely; to officially rebuke

**chicanery** (noun) trickery or subterfuge

**connoisseur** (noun) an informed and astute judge in matters of  
taste; expert

**convoluted** (adj.) complex or complicated

**disabuse** (verb) to undeceive; to set right

**discordant** (adj.) conflicting; dissonant or harsh in sound

**disparate** (adj.) fundamentally distinct or dissimilar

**effrontery** (noun) extreme boldness; presumptuousness

**eloquent** (adj.) well-spoken, expressive, articulate (noun form: *eloquence*)

**enervate** (verb) to weaken; to reduce in vitality

**ennui** (noun) dissatisfaction and restlessness resulting from boredom or apathy

**equivocate** (verb) to use ambiguous language with a deceptive intent (adj. form: *equivocal*)

**erudite** (adj.) very learned; scholarly (noun form: *erudition*)

**exculpate** (verb) to exonerate; to clear of blame

**exigent** (adj.) urgent, pressing; requiring immediate action or attention

**extemporaneous** (adj.) improvised; done without preparation

**filibuster** (noun) intentional obstruction, especially using prolonged speechmaking to delay legislative action

**fulminate** (verb) to loudly attack or denounce

**ingenuous** (adj.) artless; frank and candid; lacking in sophistication

**inured** (adj.) accustomed to accepting something undesirable

**irascible** (adj.) easily angered; prone to temperamental outbursts

**laud** (verb) to praise highly (adj. form: *laudatory*)

**lucid** (adj.) clear; easily understood

**magnanimity** (noun) the quality of being generously noble in mind and heart, especially in forgiving (adj. form: *magnanimous*)

**martial** (adj.) associated with war and the armed forces

**mundane** (adj.) of the world; typical of or concerned with the ordinary

**nascent** (adj.) coming into being; in early developmental stages

**nebulous** (adj.) vague; cloudy; lacking clearly defined form

**neologism** (noun) a new word, expression, or usage; the creation or use of new words or senses

**noxious** (adj.) harmful, injurious

**obtuse** (adj.) lacking sharpness of intellect; not clear or precise in thought or expression

**obviate** (verb) to anticipate and make unnecessary

**onerous** (adj.) troubling; burdensome

**paean** (noun) a song or hymn of praise and thanksgiving

**parody** (noun) a humorous imitation intended for ridicule or comic effect, especially in literature and art

**perennial** (adj.) recurrent through the year or many years; happening repeatedly

**perfidy** (noun) intentional breach of faith; treachery (adj. form: *perfidious*)

**perfunctory** (adj.) cursory; done without care or interest

**perspicacious** (adj.) acutely perceptive; having keen discernment (noun form: *perspicacity*)

**prattle** (verb) to babble meaninglessly; to talk in an empty and idle manner

**precipitate** (adj.) acting with excessive haste or impulse

**precipitate** (verb) to cause or happen before anticipated or required

**predilection** (noun) a disposition in favor of something; preference

**prescience** (noun) foreknowledge of events; knowing of events prior to their occurring (adj. form: *prescient*)

**prevaricate** (verb) to deliberately avoid the truth; to mislead

**qualms** (noun) misgivings; reservations; causes for hesitancy

**recant** (verb) to retract, especially a previously held belief

**refute** (verb) to disprove; to successfully argue against

**relegate** (verb) to forcibly assign, especially to a lower place or position

**reticent** (adj.) quiet; reserved; reluctant to express thoughts and feelings

**solicitous** (adj.) concerned and attentive; eager

**sordid** (adj.) characterized by filth, grime, or squalor; foul

**sporadic** (adj.) occurring only occasionally, or in scattered instances

**squander** (verb) to waste by spending or using irresponsibly

**static** (adj.) not moving, active, or in motion; at rest

**stupefy** (verb) to stun, baffle, or amaze

**stymie** (verb) to block; to thwart

**synthesis** (noun) the combination of parts to make a whole (verb form: *synthesize*)

**torque** (noun) a force that causes rotation

**tortuous** (adj.) winding, twisting; excessively complicated

**truculent** (adj.) fierce and cruel; eager to fight

**veracity** (noun) truthfulness, honesty

**virulent** (adj.) extremely harmful or poisonous; bitterly hostile or antagonistic

**voracious** (adj.) having an insatiable appetite for an activity or pursuit; ravenous

**waver** (verb) to move to and fro; to sway; to be unsettled in opinion

## Group 1 Exercises

Match the following words to their definitions. Answers can be found in Part V.

1. improvised; without preparation

A. veracity

2. a newly coined word or expression

B. recant

3. a song of joy and praise

C. extemporaneous

4. to praise highly

D. stymie

5. truthfulness; honesty

E. paeon

6. artless; frank and candid

F. lucid

7. associated with war and the military

G. laud

- |   |                |
|---|----------------|
| 8. to retract a belief or statement       | H. onerous     |
| 9. cursory; done without care or interest | I. tortuous    |
| 10. troubling; burdensome                 | J. neologism   |
| 11. to criticize; to officially rebuke    | K. martial     |
| 12. winding; twisting; complicated        | L. ingenuous   |
| 13. to block; to thwart                   | M. censure     |
| 14. clear; easily understood              | N. perfunctory |



#### **Hold Up and Break**

Did you just tackle Key Terms Group 1? Before you jump into Group 2, give yourself a break. Take a walk, get some air, eat a snack. Let the Group 1 words sink in before you dive into Group 2.

## **Key Terms Group 2**

**abate** (verb) to lessen in intensity or degree

**accolade** (noun) an expression of praise

**adulation** (noun) excessive praise; intense adoration

**aesthetic** (adj.) dealing with, appreciative of, or responsive to art or the beautiful

**ameliorate** (verb) to make better or more tolerable

**ascetic** (noun) one who practices rigid self-denial, especially as an act of religious devotion

**avarice** (noun) greed, especially for wealth (adj. form: *avaricious*)

**burgeon** (verb) to grow rapidly or flourish

**bucolic** (adj.) rustic and pastoral; characteristic of rural areas and their inhabitants

**cacophony** (noun) harsh, jarring, discordant sound; dissonance (adj. form: *cacophonous*)

**canon** (noun) an established set of principles or code of laws, often religious in nature (adj. form: *canonical*)

**castigation** (noun) severe criticism or punishment (verb form: *castigate*)

**catalyst** (noun) a substance that accelerates the rate of a chemical reaction without itself changing; a person or thing that causes change

**caustic** (adj.) burning or stinging; causing corrosion

**chary** (adj.) wary; cautious; sparing

**cogent** (adj.) appealing forcibly to the mind or reason; convincing

**complaisance** (noun) the willingness to comply with the wishes of others (adj. form: *complaisant*)

**contentious** (adj.) argumentative; quarrelsome; causing controversy or disagreement

**contrite** (adj.) regretful; penitent; seeking forgiveness (noun form: *contrition*)

**culpable** (adj.) deserving blame (noun form: *culpability*)

**dearth** (noun) smallness of quantity or number; scarcity; a lack

**demur** (verb) to question or oppose

**didactic** (adj.) intended to teach or instruct

**discretion** (noun) cautious reserve in speech; ability to make responsible decisions (adj. form: *discreet*)

**disinterested** (adj.) free of bias or self-interest; impartial

**dogmatic** (adj.) expressing a rigid opinion based on unproved or improvable principles (noun form: *dogma*)

**ebullience** (noun) the quality of lively or enthusiastic expression of thoughts and feelings (adj. form: *ebullient*)

**eclectic** (adj.) composed of elements drawn from various sources

**elegy** (noun) a mournful poem, especially one lamenting the dead (adj. form: *elegiac*)

**emollient** (adj.) (noun) soothing, especially to the skin; making less harsh; mollifying; an agent that softens or smoothes the skin

**empirical** (adj.) based on observation or experiment

**enigmatic** (adj.) mysterious; obscure; difficult to understand (noun form: *enigma*)

**ephemeral** (adj.) brief; fleeting

**esoteric** (adj.) intended for or understood by a small, specific group

**eulogy** (noun) a speech honoring the dead (verb form: *eulogize*)

**exonerate** (verb) to remove blame

**facetious** (adj.) playful; humorous

**fallacy** (noun) an invalid or incorrect notion; a mistaken belief (adj. form: *fallacious*)

**furtive** (adj.) marked by stealth; covert; surreptitious

**gregarious** (adj.) sociable; outgoing; enjoying the company of other people

**harangue** (verb)/(noun) to deliver a forceful or angry speech; ranting speech or writing.

**heretical** (adj.) violating accepted dogma or convention (noun form: *heresy*)

**hyperbole** (noun) an exaggerated statement, often used as a figure of speech (adj. form: *hyperbolic*)

**impecunious** (adj.) lacking funds; without money

**incipient** (adj.) beginning to come into being or to become apparent

**inert** (adj.) unmoving; lethargic; sluggish

**innocuous** (adj.) harmless; causing no damage



**intransigent** (adj.) refusing to compromise (noun form: *intransigence*)

**inveigle** (verb) to obtain by deception or flattery

**morose** (adj.) sad; sullen; melancholy

**odious** (adj.) evoking intense aversion or dislike

**opaque** (adj.) impenetrable by light; not reflecting light

**oscillation** (noun) the act or state of swinging back and forth with a steady, uninterrupted rhythm (verb form: *oscillate*)

**penurious** (adj.) penny-pinching; excessively thrifty; ungenerous

**pernicious** (adj.) extremely harmful in a way that is not easily seen or noticed

**peruse** (verb) to examine with great care (noun form: *perusal*)

**pious** (adj.) extremely reverent or devout; showing strong religious devotion (noun form: *piety*)

**precursor** (noun) one that precedes and indicates or announces another

**preen** (verb) to dress up; to primp; to groom oneself with elaborate care

**prodigious** (adj.) abundant in size, force, or extent; extraordinary

**prolific** (adj.) producing large volumes or amounts; productive

**putrefy** (verb) to rot; to decay and give off a foul odor (adj. form: *putrid*)

**quaff** (verb) to drink deeply

**quiescence** (noun) stillness; motionlessness; quality of being at rest (adj. form: *quiescent*)

**redoubtable** (adj.) awe-inspiring; worthy of honor

**sanction** (noun)/(verb) authoritative permission or approval; a penalty intended to enforce compliance; to give permission or authority

**satire** (noun) a literary work that ridicules or criticizes a human vice through humor or derision (adj. form: *satirical*)

**squalid** (adj.) sordid; wretched and dirty as from neglect (noun form: *squalor*)

**stoic** (adj.) indifferent to or unaffected by pleasure or pain; steadfast (noun form: *stoicism*)

**supplant** (verb) to take the place of; to supersede

**torpid** (adj.) lethargic; sluggish; dormant (noun form: *torpor*)

**ubiquitous** (adj.) existing everywhere at the same time; constantly encountered; widespread

**urbane** (adj.) sophisticated; refined; elegant (noun form: *urbanity*)

**vilify** (verb) to defame; to characterize harshly

**viscous** (adj.) thick; sticky (noun form: *viscosity*)

## Group 2 Exercises

Match the following words to their definitions. Answers can be found in Part V.

- |  |                  |
|--|------------------|
| 1. brief; fleeting                                   | A. pernicious    |
| 2. a forceful or angry speech                        | B. ephemeral     |
| 3. arousing strong dislike or aversion               | C. avarice       |
| 4. to free from blame or responsibility              | D. quaff         |
| 5. arousing fear or awe; worthy of honor; formidable | E. caustic       |
| 6. unexpectedly harmful                              | F. odious        |
| 7. to drink deeply                                   | G. dearth        |
| 8. stinging; corrosive; sarcastic; biting            | H. inert         |
| 9. impressively great in size,                       | I. disinterested |

force, or extent; enormous

- |  |                |
|--|----------------|
| 10. greed; hunger for money                          | J. exonerate   |
| 11. unmoving; lethargic                              | K. inveigle    |
| 12. impartial; unbiased                              | L. prodigious  |
| 13. lack; scarcity                                   | M. harangue    |
| 14. to win over by deception,<br>coaxing or flattery | N. redoubtable |



**Break Time!**

How did you do in Group 2? Take a moment to relax and let your mind rest before diving into Group 3. Remember to do this between each group of words so you don't overload your brain!

### Key Terms Group 3

**acumen** (noun) keen, accurate judgment or insight

**adulterate** (verb) to reduce purity by combining with inferior ingredients

**amalgamate** (verb) to combine several elements into a whole  
(noun form: *amalgamation*)

**archaic** (adj.) outdated; associated with an earlier, perhaps more primitive, time

**aver** (verb) to state as a fact; to declare or assert

**bolster** (verb) to provide support or reinforcement

**bombastic** (adj.) pompous; grandiloquent (noun form: *bombast*)

**diatribe** (noun) a harsh denunciation

**dissemble** (verb) to disguise or conceal; to mislead

**eccentric** (adj.) departing from norms or conventions

**endemic** (adj.) characteristic of or often found in a particular locality, region, or people

**evanescent** (adj.) tending to disappear like vapor; vanishing

**exacerbate** (verb) to make worse or more severe

**fervent** (adj.) greatly emotional or zealous (noun form: *fervor*)

**fortuitous** (adj.) happening by accident or chance

**germane** (adj.) relevant to the subject at hand; appropriate in subject matter

**grandiloquence** (noun) pompous speech or expression (adj. form: *grandiloquent*)

**hackneyed** (adj.) rendered trite or commonplace by frequent usage

**halcyon** (adj.) calm and peaceful

**hedonism** (noun) devotion to pleasurable pursuits, especially to the pleasures of the senses (a *hedonist* is someone who pursues pleasure)

**hegemony** (noun) the consistent dominance of one state or group over others

**iconoclast** (noun) one who attacks or undermines traditional conventions or institutions

**idolatrous** (adj.) given to intense or excessive devotion to something (noun form: *idolatry*)

**impassive** (adj.) revealing no emotion

**imperturbable** (adj.) marked by extreme calm, impassivity, and steadiness

**implacable** (adj.) not capable of being appeased or significantly changed

**impunity** (noun) immunity from punishment or penalty

**inchoate** (adj.) in an initial stage; not fully formed

**infelicitous** (adj.) unfortunate; inappropriate

**insipid** (adj.) lacking in qualities that interest, stimulate, or challenge

**loquacious** (adj.) extremely talkative (noun form: *loquacity*)

**luminous** (adj.) characterized by brightness and the emission of light

**malevolent** (adj.) having or showing often vicious ill will, spite, or hatred (noun form: *malevolence*)

**malleable** (adj.) capable of being shaped or formed; tractable; pliable

**mendacity** (noun) the condition of being untruthful; dishonesty (adj. form: *mendacious*)

**meticulous** (adj.) characterized by extreme care and precision; attentive to detail

**misanthrope** (noun) one who hates all other humans (adj. form: *misanthropic*)

**mitigate** (verb) to make or become less severe or intense; to moderate

**obdurate** (adj.) unyielding; hardhearted; intractable

**obsequious** (adj.) exhibiting a fawning attentiveness

**occlude** (verb) to obstruct or block

**opprobrium** (noun) disgrace; contempt; scorn

**pedagogy** (noun) the profession or principles of teaching or instructing

**pedantic** (adj.) overly concerned with the trivial details of learning or education; show-offish about one's knowledge

**penury** (noun) poverty; destitution

**pervasive** (adj.) having the tendency to permeate or spread throughout

**pine** (verb) to yearn intensely; to languish; to lose vigor

**pirate** (verb) to illegally use or reproduce

**pith** (noun) the essential or central part

**pithy** (adj.) precise and brief

**placate** (verb) to appease; to calm by making concessions

**platitude** (noun) a superficial remark, especially one offered as meaningful

**plummet** (verb) to plunge or drop straight down

**polemical** (adj.) controversial; argumentative

**prodigal** (adj.) recklessly wasteful; extravagant; profuse; lavish

**profuse** (adj.) given or coming forth abundantly; extravagant

**proliferate** (verb) to grow or increase swiftly and abundantly

**queries** (noun) questions; inquiries; doubts in the mind; reservations

**querulous** (adj.) prone to complaining or grumbling; peevish

**rancorous** (adj.) characterized by bitter, long-lasting resentment  
(noun form: *rancor*)

**recalcitrant** (adj.) obstinately defiant of authority; difficult to manage

**repudiate** (verb) to refuse to have anything to do with; to disown

**rescind** (verb) to invalidate; to repeal; to retract

**reverent** (adj.) marked by, feeling, or expressing a feeling of profound awe and respect (noun form: *reverence*)

**rhetoric** (noun) the art or study of effective use of language for communication and persuasion

**salubrious** (adj.) promoting health or well-being

**solvent** (adj.) able to meet financial obligations; able to dissolve another substance

**specious** (adj.) seeming true, but actually being fallacious; misleadingly attractive; plausible but false

**spurious** (adj.) lacking authenticity or validity; false; counterfeit

**subpoena** (noun) a court order requiring appearance and/or testimony

**succinct** (adj.) brief; concise

**superfluous** (adj.) exceeding what is sufficient or necessary

**surfeit** (verb)/(noun) an overabundant supply; excess; to feed or supply to excess

**tenacity** (noun) the quality of adherence or persistence to something valued; persistent determination (adj. form: *tenacious*)

**tenuous** (adj.) having little substance or strength; flimsy; weak

**tirade** (noun) a long and extremely critical speech; a harsh denunciation

**transient** (adj.) fleeting; passing quickly; brief

**zealous** (adj.) fervent; ardent; impassioned, devoted to a cause (a *zealot* is a zealous person)

### Group 3 Exercises

Match the following words to their definitions. Answers can be found in Part V.

- |   |              |
|---|--------------|
| 1. brief; concise; tersely<br>cogent              | A. hegemony  |
| 2. prone to complaining;<br>whining               | B. aver      |
| 3. fawning; ingratiating                          | C. insipid   |
| 4. marked by bitter, deep-<br>seated resentment   | D. pithy     |
| 5. controversial;<br>argumentative                | E. placate   |
| 6. dominance of one state or<br>group over others | F. prodigal  |
| 7. uninteresting; tasteless;<br>flat; dull        | G. querulous |
| 8. thin; flimsy; of little<br>substance           | H. surfeit   |
| 9. excess; overindulgence                         | I. rancorous |

- |  |               |
|--|---------------|
| 10. wasteful; recklessly extravagant                   | J. bombastic  |
| 11. to appease; to pacify with concessions             | K. obsequious |
| 12. to assert; to declare; to allege; to state as fact | L. evanescent |
| 13. pompous; grandiloquent                             | M. polemical  |
| 14. tending to vanish like vapor                       | N. tenuous    |



**Vocab Video!**

Head online to your Premium Student Tools to watch a video tutorial about Vocabulary Flashcard Strategies.



**What's Your Strategy?**

Do you find flash cards helpful? Or do you prefer word lists? Or smartphone apps? Figure out the strategy that works best for you when it comes to learning vocabulary and stick to it!

## Key Terms Group 4

**acerbic** (adj.) having a sour or bitter taste or character; sharp; biting



**aggrandize** (verb) to increase in intensity, power, influence, or prestige

**alchemy** (noun) a medieval science aimed at the transmutation of metals, especially base metals into gold (an *alchemist* is one who practices alchemy)

**amenable** (adj.) agreeable; responsive to suggestion

**anachronism** (noun) something or someone out of place in terms of historical or chronological context

**astrigent** (noun)/(adj.) having a tightening effect on living tissue; harsh; severe; something with a tightening effect on tissue

**contiguous** (adj.) sharing a border; touching; adjacent

**convention** (noun) a generally agreed-upon practice or attitude

**credulous** (adj.) tending to believe too readily; gullible (noun form: *credulity*)

**cynicism** (noun) an attitude or quality of belief that all people are motivated by selfishness (adj. form: *cynical*)

**decorum** (noun) polite or appropriate conduct or behavior (adj. form: *decorous*)

**derision** (noun) scorn, ridicule, contemptuous treatment (adj. form: *derisive*; verb form: *deride*)

**desiccate** (verb) to dry out or dehydrate; to make dry or dull

**dilettante** (noun) one with an amateurish or superficial interest in the arts or a branch of knowledge

**disparage** (verb) to slight or belittle

**divulge** (verb) to disclose something secret

**fawn** (verb) to flatter or praise excessively

**flout** (verb) to show contempt for, as in a rule or convention

**garrulous** (adj.) pointlessly talkative; talking too much

**glib** (adj.) marked by ease or informality; nonchalant; lacking in depth; superficial

**hubris** (noun) overbearing presumption or pride; arrogance

**imminent** (adj.) about to happen; impending

**immutable** (adj.) not capable of change

**impetuous** (adj.) hastily or rashly energetic; impulsive and vehement

**indifferent** (adj.) having no interest or concern; showing no bias or prejudice

**inimical** (adj.) damaging; harmful; injurious

**intractable** (adj.) not easily managed or directed; stubborn; obstinate

**intrepid** (adj.) steadfast and courageous

**laconic** (adj.) using few words; terse

**maverick** (noun) an independent individual who does not go along with a group or party

**mercurial** (adj.) characterized by rapid and unpredictable change in mood

**mollify** (verb) to calm or soothe; to reduce in emotional intensity

**neophyte** (noun) a recent convert; a beginner; a novice

**obfuscate** (verb) to deliberately obscure; to make confusing

**obstinate** (adj.) stubborn; hard-headed; uncompromising

**ostentatious** (adj.) characterized by or given to pretentious display; showy

**pervade** (verb) to permeate throughout (adj. form: *pervasive*)

**phlegmatic** (adj.) calm; sluggish; unemotional

**plethora** (noun) an overabundance; a surplus

**pragmatic** (adj.) practical rather than idealistic

**presumptuous** (adj.) overstepping due bounds (as of propriety or courtesy); taking liberties

**pristine** (adj.) pure; uncorrupted; clean

**probity** (noun) adherence to highest principles; complete and confirmed integrity; uprightness

**proclivity** (noun) a natural predisposition or inclination

**profligate** (adj.) excessively wasteful; recklessly extravagant (noun form: *profligacy*)

**propensity** (noun) a natural inclination or tendency; penchant

**prosaic** (adj.) dull; lacking in spirit or imagination

**pungent** (adj.) characterized by a strong, sharp smell or taste

**quixotic** (adj.) foolishly impractical; marked by lofty romantic ideals

**quotidian** (adj.) occurring or recurring daily; commonplace

**rarefy** (verb) to make or become thin, less dense; to refine

**recondite** (adj.) hidden; concealed; difficult to understand; obscure

**refulgent** (adj.) radiant; shiny; brilliant

**renege** (verb) to fail to honor a commitment; to go back on a promise

**sedulous** (adj.) diligent; persistent; hard-working

**shard** (noun) a piece of broken pottery or glass

**soporific** (adj.) causing drowsiness; tending to induce sleep

**sparse** (adj.) thin; not dense; arranged at widely spaced intervals

**spendthrift** (noun) one who spends money wastefully

**subtle** (adj.) not obvious; elusive; difficult to discern

**tacit** (adj.) implied; not explicitly stated

**terse** (adj.) brief and concise in wording

**tout** (verb) to publicly praise or promote

**trenchant** (adj.) sharply perceptive; keen; penetrating

**unfeigned** (adj.) genuine; not false or hypocritical

**untenable** (adj.) indefensible; not viable; uninhabitable

**vacillate** (verb) to waver indecisively between one course of action or opinion and another

**variegated** (adj.) multicolored; characterized by a variety of patches of different color

**vexation** (noun) annoyance; irritation (verb form: *vex*)

**vigilant** (adj.) alertly watchful (noun form: *vigilance*)

**vituperate** (verb) to use harsh condemnatory language; to abuse or censure severely or abusively; to berate

**volatile** (adj.) readily changing to a vapor; changeable; fickle;  
explosive (noun form: *volatility*)

### Group 4 Exercises

Match the following words to their definitions. Answers can be found in Part V.

- |  |                |
|--|----------------|
| 1. acidic or biting; bitter in taste or tone           | A. anachronism |
| 2. sleep-inducing; causing drowsiness                  | B. contiguous  |
| 3. a surplus; an overabundance                         | C. dilettante  |
| 4. one with superficial interest in a subject          | D. intractable |
| 5. arrogance; overbearing pride                        | E. prosaic     |
| 6. sharing a border; touching; adjacent                | F. quixotic    |
| 7. talking too much; rambling                          | G. recondite   |
| 8. something out of place in history or chronology     | H. vituperate  |
| 9. difficult to understand; obscure; hidden            | I. acerbic     |
| 10. dull; unimaginative; ordinary                      | J. garrulous   |
| 11. unemotional; calm                                  | K. hubris      |
| 12. stubborn; obstinate; difficult to manage or govern | L. soporific   |

13. condemn with harsh,  
abusive words; berate

M. phlegmatic

14. foolishly impractical;  
marked by lofty ideals

N. plethora

## BEYOND THE KEY TERMS LIST

So you've finished the Key Terms List and you're now the master of many more words than you were before. What to do next? Why, go *beyond the Key Terms List* of course! The Key Terms List was just the beginning. To maximize your score on the GRE you must be relentless in increasing your vocabulary. Don't let up. Keep learning words until the day you sit down for the exam. The following lists of extra words don't have exercises, so just keep working with your notebook or flash cards and get your friends to quiz you. You are a vocabulary machine!

### Beyond the Key Terms Group 1

The following list contains some of those simple-sounding words with less common secondary meanings that ETS likes to test on the GRE.

**alloy** (verb) to commingle; to debase by mixing with something inferior; *unalloyed* means pure

**appropriate** (verb) to take for one's own use; to confiscate

**arrest, arresting** (verb)/(adj.) to suspend; to engage; holding one's attention: as in an arresting portrait

**august** (adj.) majestic, venerable

**bent** (noun) leaning, inclination, proclivity, tendency

**broach** (verb) to bring up; to announce; to begin to talk about

**brook** (verb) to tolerate; to endure; to countenance

**cardinal** (adj.) major, as in cardinal sin

**chauvinist** (noun) a blindly devoted patriot

**color** (verb) to change as if by dyeing, i.e., to distort, gloss, or affect (usually the first)

**consequential** (adj.) pompous, self-important (primary definitions are logically following; important)

**damp** (verb) to diminish the intensity or check the vibration of a sound

**die** (noun) a tool used for shaping, as in a tool-and-die shop

**essay** (verb) to test or try; to attempt; to experiment

**exact** (verb) to demand; to call for; to require; to take

**fell** (verb) to cause to fall by striking

**fell** (adj.) inhumanly cruel

**flag** (verb) to sag or droop; to become spiritless; to decline

**flip** (adj.) sarcastic, impertinent, as in flippant: a flip remark

**ford** (verb) to wade across the shallow part of a river or stream

**grouse** (verb) to complain or grumble

**guy** (noun)/(verb) a rope, cord, or cable attached to something as a brace or guide; to steady or reinforce using a guy: think *guide*.  
(verb form: *guyed*, *guying*)

**intimate** (verb) to imply, suggest, or insinuate

**list** (verb) to tilt or lean to one side

**lumber** (verb) to move heavily and clumsily

**meet** (adj.) fitting, proper

**milk** (verb) to exploit; to squeeze every last ounce of

**mince** (verb) to pronounce or speak affectedly; to euphemize, to speak too carefully. Also, to take tiny steps; to tiptoe

**nice** (adj.) exacting, fastidious, extremely precise

**occult** (adj.) hidden, concealed, beyond comprehension

**pedestrian** (adj.) commonplace, trite, unremarkable, quotidian

**pied** (adj.) multicolored, usually in blotches

**pine** (verb) to lose vigor (as through grief); to yearn

**plastic** (adj.) moldable, pliable, not rigid

**pluck** (noun) courage, spunk, fortitude  
**prize** (verb) to pry, to press or force with a lever; something taken by force, spoils  
**rail** (verb) to complain about bitterly  
**rent** (verb)/(noun) torn (past tense of *rend*); an opening or tear caused by such  
**quail** (verb) to lose courage; to turn frightened  
**qualify** (verb) to limit  
**sap** (verb) to enervate or weaken the vitality of  
**sap** (noun) a fool or nitwit  
**scurvy** (adj.) contemptible, despicable  
**singular** (adj.) exceptional, unusual, odd  
**stand** (noun) a group of trees  
**steep** (verb) to saturate or completely soak, as in to let a tea bag steep  
**strut** (noun) the supporting structural cross-part of a wing  
**table** (verb) to remove (as a parliamentary motion) from consideration  
**tender** (verb) to proffer or offer  
**waffle** (verb) to equivocate; to change one's position  
**wag** (noun) wit, joker

## **Beyond the Key Terms Group 2**

**abjure** (verb) to renounce or reject solemnly; to recant; to avoid  
**adumbrate** (verb) to foreshadow vaguely or intimate; to suggest or outline sketchily; to obscure or overshadow  
**anathema** (noun) a solemn or ecclesiastical (religious) curse; accursed or thoroughly loathed person or thing  
**anodyne** (adj.)/(noun) soothing; something that assuages or allays pain or comforts  
**apogee** (noun) farthest or highest point; culmination; zenith

**apostate** (noun) one who abandons long-held religious or political convictions

**apotheosis** (noun) deification; glorification to godliness; an exalted example; a model of excellence or perfection

**asperity** (noun) severity, rigor; roughness, harshness; acrimony, irritability

**asseverate** (verb) to aver, allege, or assert

**assiduous** (adj.) diligent, hard-working, sedulous

**augury** (noun) omen, portent

**bellicose** (adj.) belligerent, pugnacious, warlike

**calumniate** (verb) to slander, to make a false accusation; *calumny* means slander, aspersion

**captious** (adj.) disposed to point out trivial faults; calculated to confuse or entrap in argument

**cavil** (verb) to find fault without good reason

**celerity** (noun) speed, alacrity; think *accelerate*

**chimera** (noun) an illusion; originally, an imaginary fire-breathing she-monster

**contumacious** (adj.) insubordinate, rebellious; *contumely* means insult, scorn, aspersion

**debacle** (noun) rout, fiasco, complete failure

**denouement** (noun) an outcome or solution; the unraveling of a plot

**descry** (verb) to catch sight of

**desuetude** (noun) disuse

**desultory** (adj.) random; aimless; marked by a lack of plan or purpose

**diaphanous** (adj.) transparent, gauzy

**diffident** (adj.) reserved, shy, unassuming; lacking in self-confidence

**dirge** (noun) a song of grief or lamentation



**encomium** (noun) glowing and enthusiastic praise; panegyric, tribute, eulogy

**eschew** (verb) to shun or avoid

**excoriate** (verb) to censure scathingly, to upbraid

**execrate** (verb) to denounce, to feel loathing for, to curse, to declare to be evil

**exegesis** (noun) critical examination, explication

**expiate** (verb) to atone or make amends for

**extirpate** (verb) to destroy, to exterminate, to cut out, to excise

**fatuous** (adj.) silly, inanely foolish

**fractious** (adj.) quarrelsome, rebellious, unruly, refractory, irritable

**gainsay** (verb) to deny, to dispute, to contradict, to oppose

**heterodox** (adj.) unorthodox, heretical, iconoclastic

**imbroglio** (noun) difficult or embarrassing situation

**indefatigable** (adj.) not easily exhaustible; tireless, dogged

**ineluctable** (adj.) certain, inevitable

**inimitable** (adj.) one of a kind, peerless

**insouciant** (adj.) unconcerned, carefree, heedless

**inveterate** (adj.) deep rooted, ingrained, habitual

**jeune** (adj.) vapid, uninteresting, nugatory; childish, immature, puerile

**lubricious** (adj.) lewd, wanton, greasy, slippery

**mendicant** (noun) a beggar, supplicant

**meretricious** (adj.) cheap, gaudy, tawdry, flashy, showy; attracting by false show

**minatory** (adj.) menacing, threatening (reminds you of the Minotaur, a threatening creature indeed)

**nadir** (noun) low point, perigee

**nonplussed** (adj.) baffled, bewildered, at a loss for what to do or think

**obstreperous** (adj.) noisily and stubbornly defiant, aggressively boisterous

**ossified** (adj.) tending to become more rigid, conventional, sterile, and reactionary with age; literally, turned into bone

**palliate** (verb) to make something seem less serious, to gloss over, to make less severe or intense

**panegyric** (noun) formal praise, eulogy, encomium; *panegyrical* means expressing elaborate praise

**parsimonious** (adj.) cheap, miserly

**pellucid** (adj.) transparent, easy to understand, limpid

**peroration** (noun) the concluding part of a speech; flowery, rhetorical speech

**plangent** (adj.) pounding, thundering, resounding

**prolix** (adj.) long-winded, verbose; *prolixity* means verbosity

**propitiate** (verb) to appease; to conciliate; *propitious* means auspicious, favorable

**puerile** (adj.) childish, immature, jejune, nugatory

**puissance** (noun) power, strength; *puissant* means powerful, strong

**pusillanimous** (adj.) cowardly, craven

**remonstrate** (verb) to protest, to object

**sagacious** (adj.) having sound judgment; perceptive, wise; like a sage

**salacious** (adj.) lustful, lascivious, bawdy

**salutary** (adj.) remedial, wholesome, causing improvement

**sanguine** (adj.) cheerful, confident, optimistic

**saturnine** (adj.) gloomy, dark, sullen, morose

**sententious** (adj.) aphoristic or moralistic; epigrammatic; tending to moralize excessively

**stentorian** (adj.) extremely loud and powerful

**stygian** (adj.) gloomy, dark

**sycophant** (noun) toady; servile, self-seeking flatterer; parasite

**tendentious** (adj.) biased; showing marked tendencies

**timorous** (adj.) timid, fearful, diffident

**tyro** (noun) novice, greenhorn, rank amateur

**vitiate** (verb) to corrupt, to debase, to spoil, to make ineffective

**voluble** (adj.) fluent, verbal, having easy use of spoken language



**Watch Out For Burnout**

Now that you've slogged through so much Verbal review, take a moment and give yourself a break before you dive into the Math section. Slow and steady wins the race!

## Part III

# How to Crack the Math Section

9 The Geography of the Math Section

10 Math Fundamentals

11 Algebra (And When to Use It)

12 Real-World Math

13 Geometry

14 Math Et Cetera

## Chapter 9

# The Geography of the Math Section

This chapter contains an overview of the content and structure you'll see on the Math section of the GRE. It provides valuable information on pacing strategies and the various question formats you'll encounter on the GRE. It also goes over how to use basic test-taking techniques such as Process of Elimination and Ballparking as they relate to math questions. After finishing this chapter, you'll have a good idea of what the Math section of the GRE looks like and some basic approaches to help you navigate it.

## WHAT'S IN THE MATH SECTION

The GRE Math section primarily tests math concepts you learned in seventh through tenth grades, including arithmetic, algebra, and geometry. ETS alleges that the Math section tests the reasoning skills that you'll use in graduate school, but what the Math section primarily tests is your comfort level with some basic math topics and your ability to take a test with strange-looking questions under timed conditions.

The Math section of the exam consists of two 35-minute sections, each of which will consist of 20 questions. The first 7 or 8 questions of each section will be *quantitative comparisons* (quant comp, for short). The remainder will consist of multiple-choice or numeric-entry questions.

### Junior High School?

The Math section of the GRE mostly tests how much you remember from the math courses you took in seventh, eighth, ninth, and tenth grades. But here's some good news: GRE math is easier than SAT math. Why? Because many people study little or no math in college. If the GRE tested college-level math, everyone but math majors would bomb the test.

If you're willing to do a little work, this is good news for you. By brushing up on the modest amount of math you need to know for the test, you can significantly increase your GRE Math score. All you have to do is shake off the dust.

## Predictable Questions

The beauty of a standardized test is that it is, well, standardized. Standardized means predictable. We know exactly what ETS is going to test and how they're going to test it. The math side of the test consists of a series of utterly predictable questions, to which we have designed a series of highly scripted responses. ETS wants you to see each problem as a new challenge to solve. What you will find, however, is that there are only about 20 math concepts that are being tested. All of the questions you will see are just different ways of asking about these different concepts. Most of these concepts you already know. Once you recognize what's being tested, even the trickiest questions become familiar and easy to solve.

## **It's Really a Reading Test**

In constructing the Math section, ETS is limited to the math that nearly everyone has studied: arithmetic, basic algebra, basic geometry, and elementary statistics. There's no calculus (or even precalculus), no trigonometry, and no major-league algebra or geometry. Because of these limitations, ETS has to resort to traps in order to create hard problems. Even the most commonly missed GRE math problems are typically based on relatively simple principles. What makes the problems difficult is that these simple principles are disguised.



Your Student Tools contain tons of informational videos, practice tests, helpful articles, and more to help with your GRE preparation. Head over there and take advantage of this fantastic resource!

Many test takers have no problem doing the actual calculations involved in the math questions on the GRE; in fact, you'll even be allowed to use a calculator (more on that soon). However, on this

test, your ability to carefully read the problems and figure out how to set them up is more important than your ability to make calculations.

As you work through this section, don't worry about how quickly you're doing the problems. Instead, take the time to really understand what the questions are asking; pay close attention to the wording of the problems. Most math errors are the result of careless mistakes caused by not reading the problem carefully enough!

### **Read and Copy Carefully**

You can do all the calculations right and still get a question wrong. How? What if you solve for  $x$  but the question asked for the value of  $x + 4$ ? Ugh. Always reread the question before you choose an answer. Take your time and don't be careless. The problem will stay on the screen as long as you want it to, so reread the question and double-check your work before answering it.

Or how about this? The radius of the circle is 5, but when you copied the picture onto your scratch paper, you accidentally made it 6. Ugh! If you make a mistake copying down information from the screen, you'll get the question wrong no matter how perfect your calculations are. You have to be extra careful when copying down information.

## **THE CALCULATOR**

As we mentioned before, on the GRE you'll be given an on-screen calculator. The calculator program on the GRE is a rudimentary one that gives you the five basic operations: addition, subtraction, multiplication, division, and square root, plus a decimal function and a positive/negative feature. It follows the order of operations, or PEMDAS (more on this topic in Chapter 10). The calculator also has the ability to transfer the answer you've calculated directly into the answer box for certain questions. The on-screen calculator can be a huge advantage—if it's used correctly!



As you might have realized by this point, ETS is not exactly looking out for your best interests. Giving you a calculator might seem like an altruistic act, but rest assured that ETS knows that there are certain ways in which calculator use can be exploited. Keep in mind the following:

- 1. Calculators Can't Think.** Calculators are good for one thing and one thing only: calculation. You still have to figure out how to set up the problem correctly. If you're not sure what to calculate, then a calculator isn't helpful. For example, if you do a percent calculation on your calculator and then hit "Transfer Display," you will have to remember to move the decimal point accordingly, depending on whether the question asks for a percent or a decimal.
- 2. The Calculator Can Be a Liability.** ETS will give you questions that you can solve with a calculator, but the calculator can actually be a liability. You will be tempted to use it. For example, students who are uncomfortable adding, subtracting, multiplying, or dividing fractions may be tempted to convert all fractions to decimals using the calculator. Don't do it. You are better off mastering fractions than avoiding them. Working with exponents and square roots is another way in which the calculator will be tempting but may yield really big and awkward numbers or long decimals. You are much better off learning the rules of manipulating exponents and square roots. Most of these problems will be faster and cleaner to solve with rules than with a calculator. The questions may also use numbers that are too big for the calculator. Time spent trying to get an answer out of a calculator for problems involving really big numbers will be time wasted. Find another way around.
- 3. A Calculator Won't Make You Faster.** Having a calculator should make you more accurate, but not necessarily faster. You still need to take time to read each problem carefully and set it

up. Don't expect to blast through problems just because you have a calculator.

#### **4. The Calculator Is No Excuse for Not Using Scratch**

**Paper.** Scratch paper is where good technique happens. Working problems by hand on scratch paper will help to avoid careless errors or skipped steps. Just because you can do multiple functions in a row on your calculator does not mean that you should be solving problems on your calculator. Use the calculator to do simple calculations that would otherwise take you time to solve. Make sure you are still writing steps out on your scratch paper, labeling results, and using setups. Accuracy is more important than speed!

Of course, you should not fear the calculator; by all means, use it and be grateful for it. Having a calculator should help you eliminate all those careless math mistakes.

## **GEOGRAPHY OF A MATH SECTION**

Each of the two Math sections contains 20 questions. Test takers are allowed 35 minutes per section. The first 7 or 8 questions of each Math section are quantitative comparisons, while the remainder are a mixed bag of problem solving, all that apply, numeric entry, and charts and graphs. Each section covers a mixture of algebra, arithmetic, quantitative reasoning, geometry, and real-world math.

## **QUESTION FORMATS**

Much like the Verbal section, the Math portion of the GRE contains a variety of different question formats. Let's go through each type of question and discuss how to crack it.

### **Standard Multiple Choice**

These questions are the basic five-answer multiple-choice questions. These are great candidates for POE (Process of

Elimination) strategies we will discuss later in this chapter.

### Multiple Choice, Multiple Answer

These questions appear similar to the standard multiple-choice questions; however, on these you will have the opportunity to pick more than one answer. There can be anywhere from three to eight answer choices. Here's an example of what these will look like:

If  $\frac{1}{12} < x < \frac{1}{6}$ , then which of the following could be the value of  $x$ ?

Indicate all such values.

☐  $\frac{2}{9}$

☐  $\frac{1}{5}$

☐  $\frac{2}{15}$

☐  $\frac{1}{10}$

☐  $\frac{2}{25}$

Your approach on these questions won't be radically different from the approach you use on standard multiple-choice questions. But obviously, you'll have to consider all of the answers—make sure you read each question carefully and remember that more than one answer can be correct. For example, for this question, you'd click on (C) and (D). You must select *every* correct choice to get credit for the problem.

## Quantitative Comparison Questions

Quantitative comparison questions, hereafter affectionately known as “quant comp” questions, ask you to compare Quantity A to Quantity B. These questions have four answer choices instead of five, and all quant comp answer choices are the same. Here they are:

- ☐ Quantity A is greater.
- ☐ Quantity B is greater.
- ☐ The two quantities are equal.
- ☐ The relationship cannot be determined from the information given.

Your job is to compare the two quantities and choose one of these answers.

Quant comp problems test the same basic arithmetic, algebra, and geometry concepts as do the other GRE math problems. So, to solve these problems, you’ll apply the same techniques you use on the other GRE math questions. But quant comps also have a few special rules you need to remember.

### **There Is No “(E)”**

Because there are only four choices on quant comp questions, after you use POE to eliminate all of the answer choices you can, your odds of guessing correctly are even better. Think about it this way: eliminating even one answer on a quant comp question will give you a one-in-three chance of guessing correctly.

### **If a Quant Comp Question Contains Only Numbers, the Answer Can’t Be (D)**

Any quant comp problem that contains only numbers and no variables must have a single solution. Therefore, on these problems,

you can eliminate (D) immediately because the larger quantity can be determined. For example, if you're asked to compare  $\frac{3}{2}$  and  $\frac{3}{4}$ , you can determine which fraction is larger, so the answer cannot be (D).

### **Compare, Don't Calculate**

You don't always have to calculate the exact value of each quantity before you compare them. After all, your mission is simply to compare the two quantities. It's often helpful to treat the two quantities as though they were two sides of an equation. Anything you can do to both sides of an equation, you can also do to both quantities. You can add the same number to both sides, you can multiply both sides by the same positive number, and you can simplify a single side by multiplying it by one.

Do only as much work as you need to.

If you can simplify the terms of a quant comp, you should always do so.

Here's a quick example:

---

**Quantity A**

$$\frac{1}{16} + \frac{1}{7} + \frac{1}{4}$$

**Quantity B**

$$\frac{1}{4} + \frac{1}{16} + \frac{1}{6}$$

☐ Quantity A is greater.

☐ Quantity B is greater.

- ☐ The two quantities are equal.
- ☐ The relationship cannot be determined from the information given.

### Here's How to Crack It

Don't do any calculating! Remember: Do only as much work as you need to in order to answer the question! The first thing you should do is eliminate (D). After all, there are only numbers here. After that, get rid of numbers that are common to both columns (think of this as simplifying). Both columns contain a  $\frac{1}{16}$  and a  $\frac{1}{4}$ , so because we're talking about addition, they can't make a difference to the outcome. With them gone, you're merely comparing the  $\frac{1}{7}$  in column A to the  $\frac{1}{6}$  in column B. Now we can eliminate (C) as well—after all, there is no way that  $\frac{1}{7}$  is equal to  $\frac{1}{6}$ . So, we're down to two choices, (A) and (B). If you don't remember how to compare fractions, don't worry—it's covered in Chapter 10 (Math Fundamentals). The answer to this question is (B).

---

Okay, let's talk about another wacky question type you'll see in the Math section.

### Numeric Entry

Some questions on the GRE won't even have answer choices, and you'll have to generate your own answer. Here's an example:

---

Each month, Renaldo earns a commission of 10.5% of his total sales for the month, plus a salary of \$2,500. If Renaldo earns \$3,025 in a certain month, what were his total sales?

### **Here's How to Crack It**

On this type of question, POE is not going to help you! That means if you're not sure how to do one of these questions, you should immediately move on. Leave it blank and come back to it in your second pass through the test.

If Renaldo earned \$3,025, then his earnings from the commission on his sales are  $\$3,025 - \$2,500 = \$525$ . So, \$525 is 10.5% of his sales. Set up an equation to find the total sales:  $525 = \frac{10.5}{100}x$ , where  $x$  is the amount of the sales. Solving this equation,  $x = 5,000$ . (We'll review how to set up and solve equations like this in later chapters.)

On the actual test, you'll find a text box where you can enter your answer, 5000. Alternatively, you could transfer your work directly from the on-screen calculator to the text box.

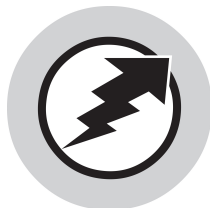
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## **Best Strategies for the GRE Math Section**

The basic test-taking strategies covered in Chapter 2 are effective for the entire test. They can be critical to your level of success on the GRE. They are time-tested and proven to be effective. You should always be mindful of them and take a few minutes to review them before working through the Math section.

Here are some strategies that will help you on the Math section, specifically. We'll show you how to use them as we go through specific question types in the chapters ahead, but for now, read through the strategies and get a sense of what they are before moving on.

It's extremely important to be mindful that the strategies that follow are secondary to actually solving the problem. There is no ambiguity when it comes to the correct answer on a problem in the Math section, and actually solving the problem should be your primary goal. However, there are times when you may encounter a problem that seems overly difficult or complicated, or you are running out of time on a section. In those cases, these strategies may be helpful.



#### **A Little Something Extra**

This book's primary goal is to provide appropriate time management skills, strong study habits, and content practice and expertise for everything that may be tested. But it doesn't hurt to prepare for a situation in which you still end up needing an extra edge.

### **Process of Elimination (POE) for Math**

Use POE whenever you can on questions that are in standard multiple-choice format. It's good practice to always read the answer choices before you start to solve a math problem because often they will help guide you—you might even be able to eliminate a couple of answer choices before you begin to calculate the answer.

Say you were asked to find 30 percent of 50. Wait—don't do any math yet. Let's say you glanced at the answer choices and



you see these:

- ☐ 5
- ☐ 15
- ☐ 30
- ☐ 80
- ☐ 150

Think about it. Whatever 30 percent of 50 is, it must be less than 50, right? So any answer choice that's greater than 50 can't be right. That means that you should eliminate both (D) and (E) before you do any calculations! Thirty percent is less than half, so you can eliminate anything greater than 25, which means that (C) is gone too. What is 10 percent of 50? Eliminate (A). You're done. The only answer left is (B).



This process is known as Ballparking. Remember that the answers are part of the question, and there are four times as many wrong answers as there are right answers. In the example above, the correct answer is fairly easy to calculate. This question is not representative of the difficulty of a GRE problem. While Ballparking is not a substitute for actually solving the problem, and should only be used as a last resort, it can help you to eliminate wrong answer choices that are clearly “out of the ballpark” and increase your odds of zeroing in on the correct answer.

## Trap Answers

ETS likes to include “trap answers” in the answer choices to their math problems. Trap answers are answer choices that appear correct upon first glance. These answers often look so tempting that

you'll choose them without actually bothering to complete the necessary calculations. Watch out for this! If a problem seems way too easy, be careful and double-check your work.

Here's a GRE example:

---

The price of a jacket is reduced by 10%. During a special sale, the price is discounted by another 10%. The special sale price is what percent less than the original price of the jacket?

- ☐ 15%
- ☐ 19%
- ☐ 20%
- ☐ 21%
- ☐ 25%

### Here's How to Crack It

The answer might seem like it should be 20 percent. But wait a minute! Is it likely that the GRE is going to give you a problem that you can solve just by adding  $10 + 10$ ? Probably not. Choice (C) is a trap answer.

To solve this problem, imagine that the original price of the jacket is \$100. After a 10 percent discount, the new price is \$90. But now when you take another 10 percent discount, we're taking it from \$90, not \$100. Ten percent of 90 is 9, so the final price is  $\$90 - \$9 = \$81$ . That represents a 19 percent total discount from the original price of \$100. The correct answer is (B).

---

### Down to Two?

Suppose you've eliminated three of the five answers you know are wrong and you're down to two. You marked it and have come back to it. At this point, you can just guess—not bad considering your chances of being right have gone from twenty percent to fifty percent. However, there is only one way to correctly answer every question on the GRE, so if you can't see why one of the remaining answer choices is wrong, you are missing something. Take a fresh look at the question and remind yourself what the answer should look like. Find it! If you are still stuck, Mark and Move.

Here's a GRE example:

---

At a certain factory, each employee either drives to work or takes the bus. The ratio of employees who take the bus to work to those who drive to work is 2 : 5. If 120 employees drive to work, how many employees work at the factory?

- ☐ 240
- ☐ 168
- ☐ 110
- ☐ 48
- ☐ 24

### **Here's How to Crack It**

If 120 workers drive to work, there must be at least that many who work in the factory, so you can eliminate (C), (D), and (E) immediately. You marked it and now you've come back to the question to choose between (A) and (B). The ratio is 2 : 5, which means that for every 2 workers who take the bus to work, there are 5 workers who drive to work. So the total number of workers must be a multiple of  $2 + 5 = 7$ . 168 is a multiple of 7, but 240 is not a multiple of 7, so the answer is (B).

---

## Stacking the Odds

There may be cases on the GRE when you are running out of time and you are going to have to guess on a question. POE can turn these questions into potential points. Before you just guess on a question, quickly consider if some of the answer choices are clearly wrong. If you can eliminate a couple of choices, you've increased your chances of getting a free point!

Consider this GRE example:

---

A 100-foot rope is cut so that the shorter piece is  $\frac{2}{3}$  the length of the longer piece. What is the length of the shorter piece in feet?

- ☐ 75
- ☐  $66\frac{2}{3}$
- ☐ 50
- ☐ 40
- ☐  $33\frac{1}{3}$

## Here's How to Crack It

Before we dive into the calculations, let's use a little common sense. The rope is 100 feet long. If we cut the rope in half, each part would be 50 feet. However, the rope was cut into two unequal pieces—a

shorter piece and a longer piece. The shorter piece must be less than 50 feet, so you can eliminate (A), (B), and (C) immediately. By the way, the correct answer is (D), but solving this problem was not the point of the exercise. The point here to show you that we can quickly eliminate answer choices to improve the odds of guessing correctly, if guessing is necessary.

---

## HOW TO STUDY

Make sure you learn the content of each of the following chapters before you go on to the next one. Don't try to cram everything in all at once. It's much better to do a small amount of studying each day over a longer period; you will master both the math concepts and the techniques if you focus on the material a little bit at a time. Just as we have been telling you in earlier chapters, let the content sink in by taking short study breaks between study sessions and giving yourself plenty of time to prepare for the GRE. Slow and steady wins the race!

### Practice, Practice, Practice

Practice may not make perfect, but it sure will help. Use everyday math calculations as practice opportunities. Balance your checkbook without a calculator! Make sure your check has been added correctly at a restaurant, and figure out the exact percentage you want to leave for a tip. The more you practice simple adding, subtracting, multiplying, and dividing on a day-to-day basis, the more your arithmetic skills will improve for the GRE.

After you work through this book, be sure to practice doing questions on our online tests and on real GREs. There are always sample questions at [www.ets.org/gre](http://www.ets.org/gre), and practice will rapidly sharpen your test-taking skills.

Finally, unless you trust our techniques, you may be reluctant to use them fully and automatically on the real GRE. The best way to develop that trust is to practice before you get to the real test.



### **Online Practice Tests**

Take advantage of all of the online practice tests that come with this book! Head over to your Student Tools and get practicing!

# Summary

- The GRE contains two 35-minute Math sections. Each section has 20 questions.
- The GRE tests math concepts up to about the tenth-grade level of difficulty.
- You will be allowed to use a calculator on the GRE. The calculator is part of the on-screen display.
- The Math section employs a number of different question formats, including multiple-choice, numeric entry, and quantitative comparison questions.
- Use the Two-Pass system on the Math section. Find the easier questions and do them first. Use your remaining time to work some of the more difficult questions.
- When you get stuck on a problem, walk away. Do a few other problems to distract your brain, and then return to the question that was giving you problems.
- Ballpark or estimate the answers to math questions, eliminating answers that don't make sense.
- Watch out for trap answers. If an answer seems too easy or obvious, it's probably a trap.
- Always do your work on your scratch paper, not in your head. Even when you are Ballparking, make sure that you are eliminating answer choices on your scratch paper. If your hand isn't moving, you're stuck and you need to walk away, or you're doing work in your head, which leads to errors.

# Chapter 10

## Math Fundamentals

Numbers and equations form the basis of all the math questions on the GRE. Simply put, the more comfortable you are working with numbers and equations, the easier the math portion of the exam will be. This chapter gives you a review of all the basic mathematical concepts including properties of numbers, factors and multiples, fractions and decimals, math vocabulary, and some basic rules of math.



## GET FAMILIAR

To do well on the GRE Math section, you'll have to be comfortable working with numbers. The concepts tested on the GRE are not exceptionally difficult, but if you are even the least bit skittish about numbers, you'll have a harder time working the problems.

This chapter will familiarize you with all the basics you need to know about numbers and how to work with them. If you're an arithmophobe or haven't used math in a while, take it slowly and make sure you're comfortable with this chapter before moving onto the succeeding ones.

You may be a little rusty when it comes to working with numbers, but with a little practice, you'll be surprised at how quickly you'll become comfortable again.

## GRE MATH VOCABULARY

Quick—what's an integer? Is 0 even or odd? How many even prime numbers are there?

Before we go through our techniques for specific types of math problems, we'll acquaint ourselves with some basic vocabulary and properties of numbers. The GRE loves to test your knowledge of integers, fractions, decimals, and all those other concepts you probably learned years ago. Make sure you're comfortable with the topics in this chapter before moving on. Even if you feel fairly at ease with number concepts, you should still work through this chapter. ETS is very good at coming up with questions that require you to know ideas forward and backward.

The math terms we will review in this section are very simple, but that doesn't mean they're not important. Every GRE math question uses simple terms, rules, and definitions. You absolutely need to

know this math “vocabulary.” Don’t worry; we will cover only the math terms that you *must* know for the GRE.

Learn your math vocabulary!

## Digits

**Digit** refers to the numbers that make up other numbers. There are 10 digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and every number is made up of one or more digits. For example, the number 10,897 has five digits: 1, 0, 8, 9, and 7. Each of the digits in a number has its own name, which is designated by a place value. In the number 10,897

- 7 is the ones, or units, digit.
- 9 is the tens digit.
- 8 is the hundreds digit.
- 0 is the thousands digit.
- 1 is the ten-thousands digit.

## Numbers

A **number** is made up of either a digit or a collection of digits. There are, of course, an infinite number of numbers. Basically, any combination of digits you can imagine is a number, which includes 0, negative numbers, fractions and decimals, and even weird numbers such as  $\sqrt{2}$ .

GRE problems like to try to trip you up on the difference between a number and an integer.

## Integers

**Integers** are numbers that have no fractional or decimal part, such as -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, and so on.

Notice that fractions, such as  $\frac{1}{2}$ , are not integers.

Remember: Fractions are NOT integers.

*Remember that the number zero is an integer!* The values of positive integers increase as they move away from 0 (6 is greater than 5); the values of negative integers decrease as they move away from zero (−6 is less than −5).

## PROPERTIES OF NUMBERS AND INTEGERS

Now that you've learned the proper names for various types of numbers, let's look at properties of numbers and integers.

### Positive or Negative

Numbers can be positive or negative. Negative numbers are less than zero, while positive numbers are greater than zero. Zero itself is neither positive nor negative—all other numbers are either positive or negative.

### Even or Odd

Only integers possess the property of being even or odd. Fractions, decimals, and other non-integers cannot be described as even or odd. Integers that are even are those that are divisible by 2; odd integers are those integers that are not divisible by 2. Put another way, even integers have a remainder of 0 when divided by 2, while odd integers have a remainder of 1 when divided by 2.

- Here are some even integers: −4, −2, 0, 2, 4, 6, 8, 10.
- Here are some odd integers: −3, −1, 1, 3, 5, 7, 9, 11.

### Zero

Zero is a special little number. It is an integer, but it is neither positive nor negative. However, try to remember these facts about

zero:

- 0 is even.
- 0 plus any other number is equal to that other number.
- 0 multiplied by any other number is equal to 0.
- You cannot divide by 0.

Zero has a number of special properties that are tested frequently on the GRE. Technically, zero is a multiple of every number, but this fact is rarely tested on the GRE.

### Keep in Mind

- Fractions are neither even nor odd.
- Any integer is even if its units digit is even; any integer is odd if its units digit is odd.
- The results of adding and multiplying odd and even integers are as follows:
  - even + even = even
  - odd + odd = even
  - even + odd = odd
  - even  $\times$  even = even
  - odd  $\times$  odd = odd
  - even  $\times$  odd = even

If you have trouble remembering some of these rules for odd and even, don't worry. As long as you remember that there are rules, you can always figure them out by plugging in numbers. Let's say you forget what happens when an odd number is multiplied by an odd number. Just pick two odd numbers, say 3 and 5, and multiply them.  $3 \times 5 = 15$ . Now you know: odd  $\times$  odd = odd.