

# CR Strategies

## **Note:**

**Refer to the NOTES at the bottom of each slide for explanations.**

# CR Questions... the structure

- A short passage (called the argument) followed by a specific question related to the passage with 5 answer choices
- **Directions:** For this question type, select the best of the given answer choices. For example:

*Most serious students are happy students, and most serious students go to graduate school. Furthermore, all students who go to graduate school are overworked.*

**Which one of the following can be properly inferred from the statements above?**

- (A) Most overworked students are happy students.
- (B) Some happy students are overworked.
- (C) All overworked students are serious students.
- (D) Some unhappy students go to graduate school.
- (E) All serious students are overworked.

# The Nitty-gritty

- CR is largely composed of arguments and arguments parts
- It checks skills of Logical Thinking and Critical Evaluation. One needs eye for detail.
- There are 13-14 questions interspersed throughout the Verbal Section
- It is possibly the best tool to check Managerial Aptitude

# Argument Parts

- An argument (passage) generally consists of
  - FACT (S)                      &                      CONCLUSION (s)
  - **Facts support the conclusion:** also called Assertion, Evidence, Premise, Proof, Supposition, Data, Information, Research, Consideration, Pattern, Explanation, Justification, Situation, Circumstance, Reasoning, Line of Reasoning, Generalization, Observation, Support, Example, Finding, Phenomenon, Illustration, Reason, To Acknowledge, etc.
  - **Conclusion is what the author tries to establish using facts.** Also known as Judgment, Opinion, Suggestion, View, Idea, Belief, Proposal, Warning, Forecast, Claim, Stand, Prediction, Hypothesis, POSITION, Stance, Point, Main Point, Inference, Implication, Generalization, Contention, Consequence, Argument, To Posit, etc.

So, finding the correct conclusion is the **half the job done** in CR. If we can identify the conclusion, everything else becomes FACT automatically.

# Find the conclusion

1. In a study, infant monkeys given a choice between two surrogate mothers—a bare wire structure equipped with a milk bottle, or a soft, suede-covered wire structure equipped with a milk bottle—unhesitatingly chose the latter. When given a choice between a bare wire structure equipped with a milk bottle and a soft, suede-covered wire structure lacking a milk bottle, they unhesitatingly chose the former.

# Find the conclusion

2. **Journalist:** A free marketplace of ideas ensures that all ideas get a fair hearing. Even ideas tainted with prejudice and malice can prompt beneficial outcomes. In most countries, however, the government is responsible for over half the information released to the public through all media. For this reason, the power of governments over information needs to be curtailed. Everyone grants that governments should not suppress free expression, yet governments continue to construct near monopolies on the publication and dissemination of enormous amounts of information.

# Find the conclusion

3. Last month OCF, Inc., announced what it described as a unique new product: an adjustable computer workstation. Three days later ErgoTech unveiled an almost identical product. The two companies claim that the similarities are coincidental and occurred because the designers independently reached the same solution to the same problem. The similarities are too fundamental to be mere coincidence, however. The two products not only look alike, but they also work alike. Both are oddly shaped with identically placed control panels with the same types of controls. Both allow the same types of adjustments and the same types of optional enhancements.

# Find the conclusion (s)

4. It is well known that many species adapt to their environment, but it is usually assumed that only the most highly evolved species alter their environment in ways that aid their own survival. However, this characteristic is actually quite common. Certain species of plankton, for example, generate a gas that is converted in the atmosphere into particles of sulfate. These particles cause water vapor to condense, thus forming clouds. Indeed, the formation of clouds over the ocean largely depends on the presence of these particles. More cloud cover means more sunlight is reflected, and so the Earth absorbs less heat. Thus plankton cause the surface of the Earth to be cooler and this benefits the plankton.

5. Rain-soaked soil contains less oxygen than does drier soil. **The roots of melon plants perform less efficiently under the low-oxygen conditions present in rain-soaked soil.** When the efficiency of melon roots is impaired, the roots do not supply sufficient amounts of the proper nutrients for the plants to perform photosynthesis at their usual levels. It follows that **melon plants have a lower-than-usual rate of photosynthesis when their roots are in rain-soaked soil.** When the photosynthesis of the plants slows, sugar stored in the fruits is drawn off to supply the plants with energy. Therefore, ripe melons harvested after a prolonged period of heavy rain should be less sweet than other ripe melons. In the argument given, the two portions in boldface play which of the following roles?

- The first states the conclusion of the argument as a whole; the second provides support for that conclusion.
- The first provides support for the conclusion of the argument as a whole; the second provides evidence that supports an objection to that conclusion.
- The first provides support for an intermediate conclusion that supports a further conclusion stated in the argument; the second states that intermediate conclusion.
- The first serves as an intermediate conclusion that supports a further conclusion stated in the argument; the second states the position that the argument as a whole opposes.
- The first states the position that the argument as a whole opposes; the second supports the conclusion of the argument.

# CR – types of Questions

- Conclusion / Inference
- Assumptions
- Weaken
- Strengthen
- Evaluate
- Paradox
- Boldface
- Miscellaneous

# Type 1: Conclusion / Inference

1. Which of the following **conclusions / assertions / inferences / statements** is most strongly supported by the passage?
2. Which of the following **must be true** as per the passage?
3. Which of the following can be **inferred** from the passage?
4. The author is **arguing** that...
5. The **main point** of the passage is that
6. Which of the following can **complete the passage**?
7. Which of the following is an **example** of the ... given in the passage?

# How to solve “conclusion” questions?

- **Word Matching** and **TRANSLATION** are the most critical skills.
- Any statement that is inconsistent with the passage is always wrong.
- The correct answer **MUST** be true, not MAY be true.
- **Elimination** is the best strategy. Don't select the correct answer. Eliminate wrong ones.

**Choose the correct conclusion or conclusions  
(any number of answers may be right)**

**The minimum voting age for males in  
district X is 18 years.**

- A. Every male above 18 can vote in district X.
- B. Someone who is not 18 can not vote in district X.
- C. A male who is not 18 can not vote in district X.
- D. For a male to be eligible to vote in district X, he must be 18 years old.
- E. For a male to be eligible to vote in district X, he must be at least 18 years old.

**Choose the correct conclusion or conclusions  
(any number of answers may be right)**

**Every male above 18 is allowed to vote in county X.**

- A. A male who is not 18 can not vote in county X.
- B. For a male to be eligible to vote in county X, he must be more than 18 years old.
- C. For a male to be eligible to vote in county X, he must be at least 18 years old.
- D. Males below 18 are not allowed to vote in county X.
- E. Age is the only criterion by which the eligibility to vote for males is decided in county X.

# Understanding Conditional “If-then”

**Consider the following statement:**

If one plays in the rain, one gets cold.

**Now consider which one follows logically from above:**

1. If one doesn't play in the rain, one doesn't get cold.
2. If one has got cold, one has played in the rain.
3. If one hasn't got cold, one hasn't played in the rain.

# Understanding Conditional “If-then”

*So if  $X \rightarrow Y$  then the following conclusions are wrong:*

1.  **$Y \rightarrow X$**
2.  **$X \text{ (NOT)} \rightarrow Y \text{ (NOT)}$**

*Only the following conclusion is right:*

**$Y \text{ (not)} \rightarrow X \text{ (not)}$**

1. Mystery stories often feature a brilliant detective and the detective's dull companion. Clues are presented in the story, and the companion wrongly infers an inaccurate solution to the mystery using the same clues that the detective uses to deduce the correct solution. Thus, the author's strategy of including the dull companion gives readers a chance to solve the mystery while also diverting them from the correct solution.

***Which of the following conclusions can be correctly drawn from the passage above?***

- A. Most mystery stories feature a brilliant detective who solves the mystery presented in the story.
- B. Mystery readers often solve the mystery in a story simply by spotting the mistakes in the reasoning of the detective's dull companion in that story.
- C. Some mystery stories give readers enough clues to infer the correct solution to the mystery.
- D. The actions of the brilliant detective in a mystery story rarely divert readers from the actions of the detective's dull companion.
- E. The detective's dull companion in a mystery story generally uncovers the misleading clues that divert readers from the mystery's correct solution.

# Some Modifier Words

- All = 100
- Some = 1 to 99 or even 100
- Most = 51 to 99 or even 100
- Not all = 0 to 99
- None = 0
- Often = Not defined
- Many = Not defined
- Much = Not defined

2. Newtonian physics dominated science for over two centuries. It found consistently successful application, becoming one of the most highly substantiated and accepted theories in the history of science. Nevertheless, Einstein's theories came to show the fundamental limits of Newtonian physics and to surpass the Newtonian view in the early 1900s, giving rise once again to a physics that has so far enjoyed wide success.

**Which one of the following logically follows from the statements above?**

- A. The history of physics is characterized by a pattern of one successful theory subsequently surpassed by another.
- B. Long-standing success or substantiation of a theory of physics is no guarantee that the theory will continue to be dominant indefinitely.
- C. Every theory of physics, no matter how successful, is eventually surpassed by one that is more successful.
- D. Once a theory of physics is accepted, it will remain dominant for centuries.
- E. If a long-accepted theory of physics is surpassed, it must be surpassed by a theory that is equally successful.

3. People with serious financial problems are so worried about money that they cannot be happy. Their misery makes everyone close to them—family, friends, and colleagues—unhappy as well. Only if their financial problems are solved can they and those around them be happy.

**Which one of the following statements can be properly inferred from the passage?**

- A. Only serious problems make people unhappy.
- B. People who solve their serious financial problems will be happy.
- C. People who do not have serious financial problems will be happy.
- D. If people are unhappy, they have serious financial problems.
- E. If people are happy, they do not have serious financial problems.

4. The head baker at Barry's Bagels can either purchase flour in-person from the local flour mill, Larry's Local Mill, or order a shipment of flour from an out-of-state mill, Isadore's Interstate Mill. The cost of the flour from Isadore's Interstate Mill is 10 percent less than the cost of the flour from Larry's Local Mill. Even after shipping and handling fees are added, it is still cheaper to order flour that has to be shipped from Isadore's than to buy flour locally from Larry's.

**The statements above, if true, best support which of the following assertions?**

- A. Production costs at Isadore's Interstate Mill are 10 percent below those at Larry's Local Mill.
- B. Buying flour from Isadore's Interstate Mill will eliminate 10 percent of the local flour mill jobs.
- C. The shipping and handling fees for a batch of flour purchased from Isadore's Interstate Mill are less than 10 percent of the cost of an identical batch of flour purchased from Larry's Local Mill.
- D. The shipping and handling fees for a batch of flour purchased from Isadore's Interstate Mill are more than 10 percent of the cost of Isadore's flour.
- E. Isadore's Interstate Mill produces flour 10% more efficiently than Larry's Local Mill does.

5. Last January, in an attempt to lower the number of traffic fatalities, the state legislature passed its “Click It or Ticket” law. Under the new law, motorists can be pulled over and ticketed for not wearing their seat belts, even if an additional driving infraction has not been committed. Lawyers and citizens’ groups are already protesting the law, saying it unfairly infringes on the rights of the state’s drivers. Law enforcement groups counter these claims by stating that the new regulations will save countless additional lives.

**Which of the following inferences is best supported by the passage above?**

- A. Prior to the “Click It or Ticket” law, motorists could not be stopped simply for not wearing a seat belt.
- B. The “Click It or Ticket” law violates current search and seizure laws.
- C. Laws similar to “Click It or Ticket” have effectively reduced traffic fatalities in a number of states.
- D. The previous seatbelt laws were ineffective in saving lives.
- E. Law enforcement groups, rather than citizens groups, should determine how to best ensure the safety of motorists.

6. Meteorite explosions in the Earth's atmosphere as large as the one that destroyed forests in Siberia, with approximately the force of a twelve-megaton nuclear blast, occur about once a century. The response of highly automated systems controlled by complex computer programs to unexpected circumstances is unpredictable.

**Which of the following conclusions can most properly be drawn, if the statements above are true, about a highly automated nuclear-missile defense system controlled by a complex computer program?**

- A. Within a century after its construction, the system would react inappropriately and might accidentally start a nuclear war.
- B. The system would be destroyed if an explosion of a large meteorite occurred in the Earth's atmosphere.
- C. It would be impossible for the system to distinguish the explosion of a large meteorite from the explosion of a nuclear weapon.
- D. Whether the system would respond inappropriately to the explosion of a large meteorite would depend on the location of the blast.
- E. It is not certain what the system's response to the explosion of a large meteorite would be, if its designers did not plan for such a contingency.

7. Laws requiring the use of headlights during daylight hours can prevent automobile collisions. However, since daylight visibility is worse in countries farther from the equator, any such laws would obviously be more effective in preventing collisions in those countries. In fact, the only countries that actually have such laws are farther from the equator than is the continental United States.

**Which of the following conclusions could be most properly drawn from the information given above?**

- A. Drivers in the continental United States who used their headlights during the day would be just as likely to become involved in a collision as would drivers who did not use their headlights.
- B. In many countries that are farther from the equator than is the continental United States poor daylight visibility is the single most important factor in automobile collisions.
- C. The proportion of automobile collisions that occur in the daytime is greater in the continental United States than in the countries that have daytime headlight laws.
- D. Fewer automobile collisions probably occur each year in countries that have daytime headlight laws than occur within the continental United States.
- E. Daytime headlight laws would probably do less to prevent automobile collisions in the continental United States than they do in the countries that have the laws.

8. High levels of fertilizer and pesticides, needed when farmers try to produce high yield of the same crop year after year, pollute water supplies. Experts therefore urge farmers to diversify their crops and to rotate their plantings yearly. To receive governmental price-support benefits for a crop, farmers must have produced that same crop for the past several years.

**The statements above, if true, best support which of the following conclusions?**

- A. The rules for governmental support of farm prices work against efforts to reduce water pollution.
- B. The only solution to the problem of water pollution from fertilizers and pesticides is to take farmland out of production.
- C. Farmers can continue to make a profit by rotating diverse crops, thus reducing costs for chemicals, but not by planting the same crop each year.
- D. New farming techniques will be developed to make it possible for farmers to reduce the application of fertilizers and pesticides.
- E. Governmental price supports for farm products are set at levels that are not high enough to allow farmers to get out of debt.

9. United States hospitals have traditionally relied primarily on revenues from paying patients to offset losses from unreimbursed care. Almost all paying patients now rely on governmental or private health insurance to pay hospital bills. Recently, insurers have been strictly limiting what they pay hospitals for the care of insured patients to amounts at or below actual costs.

**Which of the following conclusions is best supported by the information above?**

- A. Although the advance of technology has made expensive medical procedures available to the wealthy, such procedures are out of the reach of low-income patients.
- B. If hospitals do not find ways to raising additional income for unreimbursed care, they must either deny some of that care or suffer losses if they give it.
- C. Some patients have incomes too high for eligibility for governmental health insurance but are unable to afford private insurance for hospital care.
- D. If the hospitals reduce their costs in providing care, insurance companies will maintain the current level of reimbursement, thereby providing more funds for unreimbursed care.
- E. Even though philanthropic donations have traditionally provided some support for the hospitals, such donations are at present declining.

10. Which of the following best completes the passage below?

In a survey of job applicants, two-fifths admitted to being at least a little dishonest. However, the survey may underestimate the proportion of job applicants who are dishonest, because\_\_\_\_\_.

- A. some dishonest people taking the survey might have claimed on the survey to be honest
- B. some generally honest people taking the survey might have claimed on the survey to be dishonest
- C. some people who claimed on the survey to be at least a little dishonest may be very dishonest
- D. some people who claimed on the survey to be dishonest may have been answering honestly
- E. some people who are not job applicants are probably at least a little dishonest

# CR Type 2: Boldface Questions

- Structure:
  - Usually in a long paragraph, two statements (or statement parts) are written in **BOLD**, and one has to choose the option that tells the function (role) played by these bold parts.
  - Involves Argument structure concepts – one should be able to tell which is a fact, conclusion and how the argument is structured.

- One must know all the terms that are commonly used for FACT and CONCLUSION.
- **Facts support the conclusion:** also called Assertion, Evidence, Premise, Proof, Supposition, Data, Information, Research, Consideration, Pattern, Explanation, Justification, Situation, Circumstance, Reasoning, Line of Reasoning, Generalization, Observation, Support, Example, Finding, Phenomenon, Illustration, Reason, To Acknowledge, etc.
- **Conclusion is what the author tries to establish using facts.** Also known as Judgment, Opinion, View, Suggestion, Idea, Belief, Proposal, Warning, Forecast, Claim, Stand, Prediction, Hypothesis, POSITION, Stance, Point, Main Point, Inference, Implication, Generalization, Contention, Consequence, Argument, To Posit, etc.

- Sometimes the argument may contain two conclusions.
- The statement that can be used to prove the main conclusion is usually the sub-conclusion.
- In such a situation, the ONE LINE CRISP MESSAGE of the argument is the MAIN conclusion and the other is the sub-conclusion. **Asking yourself about author's position will help you get the main conclusion.**
- Sometimes, the two conclusions may be contradictory to each other (especially when two sides are involved – author and the critics etc.)

# Steps to solve BF questions

- STEP 1: Identify the conclusion (s). Do not jump to choices.
- STEP 2: Map the argument (F/F/C... etc.) and have the flow in mind. Which statement supports the conclusion and which supports some alternative conclusion.
- STEP 3: Go to choices and eliminate.

1. Astronomer: Observations of the Shoemaker-Levi comet on its collision course with Jupiter showed that the comet broke into fragments before entering Jupiter's atmosphere in 1994, but they did not show how big those fragments were. Nevertheless, some indication of their size can be inferred from spectrographic analyses of Jupiter's outer atmosphere. **After the fragments' entry, these analyses revealed unprecedented traces of sulfur.** The fragments themselves almost certainly contained no sulfur, but astronomers believe that the cloud layer below Jupiter's outer atmosphere does contain sulfur. Since **sulfur would have seeped into the outer atmosphere if comet fragments had penetrated this cloud layer,** it is likely that some of the fragments were at least large enough to have passed through Jupiter's outer atmosphere without being burned up. **In the astronomer's argument, the two portions in BOLDFACE play which of the following roles?**

- A. The first is a claim that the astronomer seeks to show is true; the second acknowledges a consideration that weighs against the truth of that claim.
- B. The first is a claim that the astronomer seeks to show is true; the second provides evidence in support of the truth of that claim.
- C. The first and the second are each considerations advanced in support of the conclusion of the argument.
- D. The first provides evidence in support of the conclusion of the argument; the second is that conclusion.
- E. The first is a circumstance for which the astronomer seeks to provide an explanation; the second acknowledges a consideration that weighs against the explanation provided by the astronomer.

2. **Economist:** Tropicorp, which constantly seeks profitable investment opportunities, has been buying and clearing sections of tropical forest for cattle ranching, although pastures newly created there become useless for grazing after just a few years. The company has not gone into rubber tapping, even though **greater profits can be made from rubber tapping**, which leaves the forest intact. Thus, some environmentalists conclude that **Tropicorp has not acted wholly out of economic self-interest**. However, these environmentalists are probably wrong. The initial investment required for a successful rubber-tapping operation is larger than that needed for a cattle ranch. Furthermore, there is a shortage of workers employable in rubber-tapping operations, and finally, taxes are higher on profits from rubber tapping than on profits from cattle ranching. **In the economist's argument, the two BOLD FACED portions play which of the following roles?**
- A. The first supports the conclusion of the economist's argument; the second calls that conclusion into question.
  - B. The first states the conclusion of the economist's argument; the second supports that conclusion.
  - C. The first supports the environmentalists' conclusion; the second states that conclusion.
  - D. The first states the environmentalists' conclusion; the second states the conclusion of the economist's argument.
  - E. Each supports the conclusion of the economist's argument.

3. Local authorities are considering an amendment to the litter law that would raise the fine for littering in the community picnic area to \$1,000. Since the inception of the litter law, **incremental increases in the littering fine have proven to be consistently effective at further reducing the amount of litter in the community picnic area.** However, raising the fine to \$1,000 would actually have the unintended effect of increasing the amount of litter in the picnic area. **Picnic area users would perceive this fine to be unreasonable and unenforceable, and would disregard the litter law altogether.**

**In the argument, the two portions in BOLDFACE play which of the following roles?**

- A. The first is irrefutable evidence that the author offers in support of a prediction; the second is that prediction.
- B. The first is a statement of causation that the author predicts will be repeated in the case at hand; the second raises evidence against this prediction.
- C. The first is a statement of fact that the author accepts to be true; the second is presented as a consequence of this fact.
- D. The first is evidence that weakens the main position that the author defends; the second is that position.
- E. The first is a statement of causation that the author predicts will not hold in the case at hand; the second offers a line of reasoning to support this prediction.

4. Consumer advocate: it is generally true, at least in this state, that lawyers who advertise a specific service charge less for that service than lawyers who do not advertise. It is also true that **each time restrictions on the advertising of legal services have been eliminated, the number of lawyers advertising their services has increased and legal costs to consumers have declined in consequence.** However, eliminating the state requirement that legal advertisements must specify fees for specific services would almost certainly increase rather than further reduce consumer's legal costs. Lawyers would no longer have an incentive to lower their fees when they begin advertising and **if no longer required to specify fee arrangements, many lawyers who now advertise would increase their fees.**

In the consumer advocate's argument, the two portions in **boldface** play which of the following roles?

- A. The first is a generalization that the consumer advocate accepts as true; the second is presented as a consequence that follows from the truth of that generalization.
- B. The first is a pattern of cause and effect that the consumer advocate argues will be repeated in the case at issue; the second acknowledges a circumstance in which that pattern would not hold.
- C. The first is pattern of cause and effect that the consumer advocate predicts will not hold in the case at issue; the second offers a consideration in support of that prediction.
- D. The first is evidence that the consumer advocate offers in support of a certain prediction; the second is that prediction.
- E. The first acknowledges a consideration that weighs against the main position that the consumer advocate defends; the second is that position.

5. Traditionally, video game manufacturers have been most strongly influenced by serious video gamers. Because devoted gamers have historically purchased the majority of video games, companies react to the desires of this market segment. Normally, devoted gamers crave speed and action; **thus, most manufacturers continue to produce games with faster chips and flashier graphics.** Unfortunately, faster chips and flashier graphics are no longer in the industry's best interest. **The devoted gaming market is deeply stagnant, and it won't soon expand.** To infuse new life into the video game market, manufacturers must simplify the functionality of their games. By doing so, current non-gamers will be attracted to join the ranks of video game fans. *In the argument, the two portions in boldface play which of the following roles?*
- A. The first is a situation that the author believes to be true; the second offers evidence to explain this situation.
- B. The first is a situation that the author argues should not continue; the second provides evidence that supports the author's position.
- C. The first is a statement of fact that contradicts the author's position; the second is the author's position.
- D. The first is a statement of fact that supports the author's position; the second is a consideration that weighs against the author's position.
- E. The first is a prediction that the author believes should not hold in this case; the second is an assumption that weighs against the author's position.

# CR Type 3: Assumption Questions

- Assumptions are unstated facts that must be true if the conclusion is true...
- Approach: The Assumption Formula (GAP FILL)  
Facts + Assumptions = Conclusion.
- So the steps are:
  - ID the conclusion (every other statement becomes FACT)
  - Try to place answer choices between the fact (s) and the conclusion. The choice that makes a flowing, sound and convincing argument is the assumption.

# Assumption as GAP Fills

For example:

1. Amy is less than 5'6" tall. Therefore she can not be a successful model.
1. Every male above 18 is allowed to vote in city X. Therefore, Jack must be allowed to vote in city X.
2. Company owner to manager: "Give this man this job. He will remain jobless otherwise."
3. Company X doesn't pay very high salaries to inexperienced people. Therefore John's salary should be lowered.

- Assumption Questions will use one of these words:
  - Assumption / Assumed / Assumes
  - Presupposition / Presupposed / Presupposes
  - Justify the conclusion
  - Inserted as an additional premise
  - The conclusion can not be true unless which of the following is true
  - The conclusion will be more properly drawn if...

# SMART TIPS

1. Something that is not mentioned in the facts but mentioned in the conclusion has to be mentioned in the assumption. Also, a connection (BRIDGE/LINK) between X and Y should occur in the assumption.
2. Something that is mentioned both in the facts and in the conclusion will usually not figure in the assumption.

## **Assumptions Type 2 : The only (or the best) way**

- If the conclusion says: the only way (or the best way) to achieve X is Y, the following is a valid assumption:
    - There is no other (or no better) way to achieve X than Y.
5. Girl Power magazine published an article proclaiming that one can lose up to 20 pounds a month by eating only soup. Kelly concludes that the only way for her to lose 40 pounds in two months is to eat only soup for 2 months.

# Assumptions Type 3: Cause and Effect

- If the conclusion of an argument is **A causes B**, the following are some valid assumptions on the GMAT:
  - B does not cause A
  - C does not cause B
- **For example:**
  6. Researchers in the field have noticed that older antelope are more cautious. Therefore, they have concluded that the quality of caution increases with age in antelope.

# Type 4 Assumption: Negate and Weaken

An argument can be analogized to a house:

- The FACTS are like the walls
- The CONCLUSION is like the roof
- The ASSUMPTIONS are like the foundation
  - As with a house foundation, an assumption is a hidden part of the structure, but critical to the integrity of the structure—all the other elements rest upon it.
- If the conclusion is valid, then the assumption must be true.
- So if the assumption is negated, the argument falls apart.

# METHOD:

- ID the conclusion
- Logically negate the choices
- The negated choice **MUST UNDERMINE** the conclusion

## **Look at this example:**

7. His get-rich-quick scheme is simple: he will use a metal detector to find hidden treasures in the sand. Then he will sell the treasures to a local pawn broker.

1. If something would have been justifiably regretted if it had occurred, then it is something that one should not have desired in the first place.  
It follows that many forgone pleasures should not have been desired in the first place.

**The conclusion above follows logically if which one of the following is assumed?**

- A. One should never regret one's pleasures.
- B. Forgone pleasures that were not desired would not have been justifiably regretted.
- C. Everything that one desires and then regrets not having is a forgone pleasure.
- D. Many forgone pleasures would have been justifiably regretted.
- E. Nothing that one should not have desired in the first place fails to be a pleasure.

2. Psychiatrist: Take any visceral emotion you care to consider. There are always situations in which it is healthy to try to express that emotion.  
So, there are always situations in which it is healthy to try to express one's anger.

**The conclusion of the argument follows logically if which one of the following is assumed?**

- A. Anger is always expressible.
- B. Anger is a visceral emotion.
- C. Some kinds of emotions are unhealthy to express.
- D. All emotions that are healthy to express are visceral.
- E. An emotion is visceral only if it is healthy to express.

3. To prevent some conflicts of interest, Congress could prohibit high-level government officials from accepting positions as lobbyists for three years after such officials leave government service. One such official concluded, however, that such a prohibition would be unfortunate because it would prevent high-level government officials from earning a livelihood for three years.

**The official's conclusion logically depends on which of the following assumptions?**

- A. Laws should not restrict the behavior of former government officials.
- B. Lobbyists are typically people who have previously been high-level government officials.
- C. Low-level government officials do not often become lobbyists when they leave government service.
- D. High-level government officials who leave government service are capable of earning a livelihood only as lobbyists.
- E. High-level government officials who leave government service are currently permitted to act as lobbyists for only three years.

4. When limitations were in effect on nuclear-arms testing, people tended to save more of their money, but when nuclear-arms testing increased, people tended to spend more of their money. The perceived threat of nuclear catastrophe, therefore, decreases the willingness of people to postpone consumption for the sake of saving money.

**The argument above assumes that**

- A. the perceived threat of nuclear catastrophe has increased over the years.
- B. most people supported the development of nuclear arms
- C. people's perception of the threat of nuclear catastrophe depends on the amount of nuclear-arms testing being done
- D. the people who saved the most money when nuclear-arms testing was limited were the ones who supported such limitations
- E. there are more consumer goods available when nuclear-arms testing increases

5. If the airspace around centrally located airports were restricted to commercial airliners and only those private planes equipped with radar, most of the private-plane traffic would be forced to use outlying airfields. Such a reduction in the amount of private-plane traffic would reduce the risk of midair collision around the centrally located airports.

**The conclusion drawn in the first sentence depends on which of the following assumptions?**

- A. Outlying airfields would be as convenient as centrally located airports for most pilots of private planes.
- B. Most outlying airfields are not equipped to handle commercial-airline traffic.
- C. Most private planes that use centrally located airports are not equipped with radar.
- D. Commercial airliners are at greater risk of becoming involved in midair collisions than are private planes.
- E. A reduction in the risk of midair collision would eventually lead to increases in commercial-airline traffic.

6. In recent years many cabinetmakers have been winning acclaim as artists. But since furniture must be useful, cabinetmakers must exercise their craft with an eye to the practical utility of their product. For this reason, cabinet-making is not art.

**Which of the following is an assumption that supports drawing the conclusion above from the reason given for that conclusion?**

- A. Some furniture is made to be placed in museums, where it will not be used by anyone.
- B. Some cabinetmakers are more concerned than others with the practical utility of the products they produce.
- C. Cabinetmakers should be more concerned with the practical utility of their products than they currently are.
- D. An object is not an art object if its maker pays attention to the object's practical utility.
- E. Artists are not concerned with the monetary value of their products.

7. Traditionally, decision-making by managers that is reasoned step-by-step has been considered preferable to intuitive decision-making. However, a recent study found that top managers used intuition significantly more than did most middle-or lower-level managers. This confirms the alternative view that intuition is actually more effective than careful, methodical reasoning.

**The conclusion above is based on which of the following assumptions?**

- A. Methodical, step-by-step reasoning is inappropriate for making many real-life management decisions.
- B. Top managers have the ability to use either intuitive reasoning or methodical, step-by-step reasoning in making decisions.
- C. The decisions made by middle-and lower-level managers can be made as easily by using methodical reasoning as by using intuitive reasoning.
- D. Top managers use intuitive reasoning in making the majority of their decisions.
- E. Top managers are more effective at decision-making than middle-or lower-level managers

8. Emissions from automobiles that burn gasoline and automobiles that burn diesel fuel are threatening the quality of life on our planet, contaminating both urban air and global atmosphere. Therefore, the only effective way to reduce such emissions is to replace the conventional diesel fuel and gasoline used in automobiles with cleaner-burning fuels, such as methanol, that create fewer emissions.

**Which one of the following is an assumption on which the argument depends?**

- A. Reducing the use of automobiles would not be a more effective means to reduce automobile emissions than the use of methanol.
- B. There is no fuel other than methanol that is cleaner-burning than both diesel fuel and gasoline.
- C. If given a choice of automobile fuels, automobile owners would not select gasoline over methanol.
- D. Automobile emissions constitute the most serious threat to the global environment.
- E. At any given time there is a direct correlation between the level of urban air pollution and the level of contamination present in the global atmosphere.

9. Every year many people become ill because of airborne mold spores in their homes. After someone becomes ill, specialists are often hired to eradicate the mold. These specialists look in damp areas of the house, since mold is almost always found in places where there is substantial moisture. If one wishes to avoid mold poisoning, then, one should make sure to keep all internal plumbing in good condition to prevent leakage that could serve as a breeding ground for mold.

**Which of the following is an assumption on which the argument depends?**

- A. Mold itself does not create moisture.
- B. Most homeowners know enough about plumbing to determine whether theirs is in good condition.
- C. Mold cannot grow in dry areas.
- D. No varieties of mold are harmless.
- E. Mold spores cannot be filtered from the air.

10. Smoking is a known cause of certain serious health problems, including emphysema and lung cancer. Now, an additional concern can be added to the list of maladies caused by smoking. A recent study surveyed both smokers and nonsmokers, and found that smokers are significantly more anxious and nervous than nonsmokers.

**Which of the following is an assumption on which the argument rests?**

- A. Anxiety and nervousness can lead to serious health problems.
- B. Anxiety and nervousness do not make individuals more likely to start smoking.
- C. Equivalent numbers of smokers and nonsmokers were surveyed for the study.
- D. Smokers are aware of the various health problems attributed to smoking, including lung cancer and emphysema.
- E. Smokers who had smoked a cigarette immediately before responding to the survey were more anxious and nervous than smokers who had not smoked for several hours.

11. A researcher discovered that people who have low levels of immune-system activity tend to score much lower on tests of mental health than do people with normal or high immune-system activity. The researcher concluded from this experiment that the immune system protects against mental illness as well as against physical disease.

**The researcher's conclusion depends on which of the following assumptions?**

- A. High immune-system activity protects against mental illness better than normal immune-system activity does.
- B. Mental illness is similar to physical disease in its effects on body systems.
- C. People with high immune-system activity cannot develop mental illness.
- D. Mental illness does not cause people's immune-system activity to decrease.
- E. Psychological treatment of mental illness is not as effective as is medical treatment.

12. A famous singer recently won a lawsuit against an advertising firm for using another singer in a commercial to evoke the famous singer's well-known rendition of a certain song. As a result of the lawsuit, advertising firms will stop using imitators in commercials. Therefore, advertising costs will rise, since famous singers' services cost more than those of their imitators.

**The conclusion above is based on which of the following assumptions?**

- A. Most people are unable to distinguish a famous singer's rendition of a song from a good imitator's rendition of the same song.
- B. Commercials using famous singers are usually more effective than commercials using imitators of famous singers.
- C. The original versions of some well-known songs are unavailable for use in commercials.
- D. Advertising firms will continue to use imitators to mimic the physical mannerisms of famous singers.
- E. The advertising industry will use well-known renditions of songs in commercials.

13. Although there has been great scientific debate for decades over global warming, most scientists now agree that human activity is causing the Earth's temperature to rise. Though predictions vary, many global warming experts believe that average global temperatures will rise between three and eight degrees Fahrenheit during the next century. Such an increase would cause an alarming rise in sea levels, displacing millions of people by destroying major population centers along the world's coastlines.

**Which of the following is an assumption in support of the argument's conclusion?**

- A. New technological developments in the next century will not divert rising seas from the world's coastal cities.
- B. Individuals will not become more aware of the steps they can take to reduce the emission of greenhouse gases.
- C. Rising sea levels similarly affect all coastal population centers.
- D. Some global warming experts predict a greater than eight degree Fahrenheit increase in global temperatures during the next century.
- E. Human activity is the sole cause of increasing global temperatures.

14. The media claim that the economy is entering a phase of growth and prosperity. They point to lower unemployment rates and increased productivity. This analysis is false, though. The number of people filing for bankruptcy has increased every month for the last six months, and bankruptcy lawyers report that they are busier than they have been in years.

**Which of the following is an assumption on which the argument depends?**

- A. Unemployment rates are not useful indicators of growth and prosperity.
- B. Economic growth cannot be measured in terms of productivity.
- C. Legislation has not been recently passed to make legal bankruptcy easier to obtain.
- D. There has not been an increase in the number of bankruptcy lawyers.
- E. The media often misrepresent the current state of economic affairs.

15. Doctor: Research shows that adolescents who play video games on a regular basis are three times as likely to develop carpal tunnel syndrome as are adolescents who do not play video games. Federal legislation that prohibits the sale of video games to minors would help curb this painful wrist condition among adolescents.

**The doctor's conclusion depends on which of the following assumptions?**

- A. The majority of federal legislators would vote for a bill that prohibits the sale of video games to minors.
- B. Not all adolescents who play video games on a regular basis suffer from carpal tunnel syndrome.
- C. Playing video games is the only way an adolescent can develop carpal tunnel syndrome.
- D. Most parents would refuse to purchase video games for their adolescent children.
- E. The regular playing of video games by adolescents does not produce such beneficial effects as better hand-eye coordination and improved reaction time.

# CR Type 4: Weaken

- All weaken questions will have either a FACT-CONCLUSION or a FACT-REASON (A causes B) relationship.
- We can never negate a fact. We can negate only the conclusion or the reason. So the model will be:



# Weaken Questions

- Options have to contain **OUTSIDE (EXTRA) INFORMATION (FACT)**
- Weaken does not mean DESTROY.
- So even mild choices may be true.

# Weaken

1. Example: As the Indian cricket team performed badly in the last World Cup, it should not be sent for the next World Cup.
  - FACT: the Indian cricket team performed badly in the last World Cup
  - Conclusion: it should not be sent for the next World Cup.
- How to weaken it?

# Weaken

2. Over the last 2 months, a police station has started receiving many more calls about crime in the adjoining areas. This is a clear indication of the fact that crime is on the rise in the adjoining areas.
  - FACT: Over the last 2 month, a police station has started receiving many more calls about crime in the adjoining areas.
  - Conclusion: crime is on the rise in the adjoining areas.
- How to weaken it?
- This is A causes B... i.e., more calls about crime → more crime...
- We can not question facts but only the reason...

# Process

- ID the conclusion
- Try to come up with your own answer
- New-information choices are welcome
- Undermine the conclusion with the help of a choice
- Look out for “ALTERNATIVE EXPLANATIONS” in FACT-REASON relationships.

# How to weaken A causes B

- Show that C (something else) causes B
- Show that when A happened, B did not happen.
- Show that when B happened, A did not happen.
- Show that B causes A (reverse relation)

# A causes B can be written as...

- caused by
- because of
- responsible for
- reason for
- leads to
- induced by
- promoted by
- determined by
- produced by
- product of
- played a role in
- was a factor in
- is an effect of

# Common Words Used...

- weaken
- attack
- undermine
- refute
- argue against
- call into question
- cast doubt
- challenge
- damage
- counter
- absurdity
- vulnerable
- flaw
- counter
- questionable
- fallacious

1. The number of airplanes equipped with a new anti-collision device has increased steadily during the past two years. During the same period, it has become increasingly common for key information about an airplane's altitude and speed to disappear suddenly from air traffic controllers' screens. The new anti-collision device, which operates at the same frequency as air traffic radar, is therefore responsible for the sudden disappearance of key information.

**Which one of the following, if true, most seriously weakens the argument?**

- A. The new anti-collision device has already prevented a considerable number of mid-air collisions.
- B. It was not until the new anti-collision device was introduced that key information first began disappearing suddenly from controllers' screens.
- C. The new anti-collision device is scheduled to be moved to a different frequency within the next two to three months.
- D. Key information began disappearing from controllers' screens three months before the new anti-collision device was first installed.
- E. The sudden disappearance of key information from controllers' screens has occurred only at relatively large airports.

2. The average life expectancy for the United States population as a whole is 73.9 years, but children born in Hawaii will live an average of 77 years, and those born in Louisiana, 71.7 years. If a newlywed couple from Louisiana were to begin their family in Hawaii, therefore, their children would be expected to live longer than would be the case if the family remained in Louisiana.

**Which of the following, if true, would most seriously weaken the conclusion drawn in the passage?**

- A. Insurance company statisticians do not believe that moving to Hawaii will significantly lengthen the average Louisianan's life.
- B. The governor of Louisiana has falsely alleged that statistics for his state are inaccurate.
- C. The longevity ascribed to Hawaii's current population is attributable mostly to genetically determined factors.
- D. Thirty percent of all Louisianans can expect to live longer than 77 years.
- E. Most of the Hawaiian Islands have levels of air pollution well below the national average for the United States.

3. A program instituted in a particular state allows parents to prepay their children's future college tuition at current rates. The program then pays the tuition annually for the child at any of the state's public colleges in which the child enrolls. Parents should participate in the program as a means of decreasing the cost for their children's college education.

**Which of the following, if true, is the most appropriate reason for parents NOT to participate in the program?**

- A. The parents are unsure about which public college in the state the child will attend.
- B. The amount of money accumulated by putting the prepayment funds in an interest-bearing account today will be greater than the total cost of tuition for any of the public colleges when the child enrolls.
- C. The annual cost of tuition at the state's public colleges is expected to increase at a faster rate than the annual increase in the cost of living.
- D. Some of the state's public colleges are contemplating large increases in tuition next year.
- E. The prepayment plan would not cover the cost of room and board at any of the state's public colleges.

4. The ice on the front windshield of the car had formed when moisture condensed during the night. The ice melted quickly after the car was warmed up the next morning because the defrosting vent, which blows on the front windshield, was turned on full force.

Which of the following, if true, most seriously jeopardizes the validity of the explanation for the speed with which the ice melted?

- A. The side windows had no ice condensation on them
- B. Even though no attempt was made to defrost the back window, the ice there melted at the same rate as did the ice on the front windshield.
- C. The speed at which ice on a window melts increases as the temperature of the air blown on the window increases
- D. The warm air from the defrosting vent for the front windshield cools rapidly as it dissipates throughout the rest of the car.
- E. The defrosting vent operates efficiently even when the heater, which blows warm air toward the feet or faces of the driver and passengers, is on.

5. A conservation group in the United States is trying to change the long-standing image of bats as frightening creatures. The group contends that bats are feared and persecuted solely because they are shy animals that are active only at night.

**Which of the following, if true, would cast the most serious doubt on the accuracy of the group's contention?**

- A. Bats are steadily losing natural roosting places such as caves and hollow trees and are thus turning to more developed areas for roosting.
- B. Bats are the chief consumers of nocturnal insects and thus can help make their hunting territory more pleasant for humans.
- C. Bats are regarded as frightening creatures not only in the United States but also in Europe, Africa, and South America.
- D. Raccoons and owls are shy and active only at night; yet they are not generally feared and persecuted.
- E. People know more about the behavior of other greatly feared animal species, such as lions, alligators, and snakes, than they do about the behavior of bats.

6. Beverage company representative: The plastic rings that hold six-packs of beverage cans together pose a threat to wild animals, which often become entangled in the discarded rings and suffocate as a result. Following our lead, all beverage companies will soon use only those rings consisting of a new plastic that disintegrates after only three days' exposure to sunlight. Once we all complete the switchover from the old to the new plastic rings, therefore, the threat of suffocation that plastic rings pose to wild animals will be eliminated.

**Which one of the following, if true, most seriously weakens the representative's argument?**

- A. The switchover to the new plastic rings will take at least two more years to complete.
- B. After the beverage companies have switched over to the new plastic rings, a substantial number of the old plastic rings will persist in most aquatic and woodland environments.
- C. The new plastic rings are slightly less expensive than the old rings.
- D. The new plastic rings rarely disintegrate during shipping of beverage six-packs because most trucks that transport canned beverages protect their cargo from sunlight.
- E. The new plastic rings disintegrate into substances that are harmful to aquatic animals when ingested in substantial quantities by them.

7. Opponents of laws that require automobile drivers and passengers to wear seat belts argue that in a free society people have the right to take risks as long as the people do not harm other as a result of taking the risks. As a result, they conclude that it should be each person's decision whether or not to wear a seat belt.

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

- A. Many new cars are built with seat belts that automatically fasten when someone sits in the front seat.
- B. Automobile insurance rates for all automobile owners are higher because of the need to pay for the increased injuries or deaths of people not wearing seat belts.
- C. Passengers in airplanes are required to wear seat belts during takeoffs and landings.
- D. The rate of automobile fatalities in states that do not have mandatory seat belt laws is greater than the rate of fatalities in states that do have such laws.
- E. In automobile accidents, a greater number of passengers who do not wear seat belts are injured than are passengers who do wear seat belts.

8. During the Second World War, about 375,000 civilians died in the United States and about 408,000 members of the United States armed forces died overseas. On the basis of those figures, it can be concluded that it was not much more dangerous to be overseas in the armed forces during the Second World War than it was to stay at home as a civilian.

**Which of the following would reveal most clearly the absurdity of the conclusion drawn above?**

- A. Counting deaths among members of the armed forces who served in the United States in addition to deaths among members of the armed forces serving overseas
- B. Expressing the difference between the numbers of deaths among civilians and members of the armed forces as a percentage of the total number of deaths
- C. Separating deaths caused by accidents during service in the armed forces from deaths caused by combat injuries
- D. Comparing death rates per thousand members of each group rather than comparing total numbers of deaths
- E. Comparing deaths caused by accidents in the United States to deaths caused by combat in the armed forces

9. Recently in City X, developers have stopped buying land, contractors have found themselves going without work for longer periods, and banks have issued fewer mortgages. There must be fewer new residents moving to City X than there were previously.

**Which of the following indicates a flaw in the reasoning above?**

- A. This year several housing blocks have gone on the market after being held up for months by legal red tape.
- B. The average size of a new home has increased significantly over the past several years.
- C. Re-sales of condominiums have increased over the past six months.
- D. The cost of materials such as lumber and cement has decreased over the past year.
- E. Sales of other big-ticket items, such as automobiles and boats, has remained steady over the past year.

10. Companies that offer “employer sponsored insurance” (ESI) pay a portion of employees’ health care costs. In the manufacturing sector last year, companies that offered ESI had worker absentee rates 22% lower, on average, than those at companies that did not offer ESI.

**If, on the basis of the evidence above, it is argued that ESI decreases worker absenteeism, which of the following, if true, would most seriously weaken that argument?**

- A. Results similar to those cited for the manufacturing sector have been found in other sectors of the economy where ESI is offered.
- B. At companies that offer ESI, employees have access to preventative health care such as regular check-ups, routine laboratory tests, and nutrition counseling.
- C. Because initiating an ESI plan requires a lot of paperwork for the company, employees, and the insurance provider, doing so is complex and time-consuming.
- D. Many firms in the manufacturing sector have improved workplace safety and decreased the occurrence of on-the-job injuries in the last five years, and most of these companies introduced ESI at the same time.
- E. In manufacturing firms where ESI is offered, the average productivity is 2% higher than it is in those firms where workers are not covered by an ESI plan.

# Numbers and Percentages Misconceptions

1. Increasing percentages automatically lead to increasing numbers.
2. Decreasing percentages automatically lead to decreasing numbers.
3. Increasing numbers automatically lead to increasing percentages.
4. Decreasing numbers automatically lead to decreasing percentages.
5. Large numbers automatically mean large percentages, and small numbers automatically mean small percentages.
6. Large percentages automatically mean large numbers, and small percentages automatically mean small numbers.

# Common terms

## **Words used to introduce NUMBERS:**

- Amount
- Quantity
- Sum
- Total
- Count
- Tally

## **Words used to introduce percentage ideas:**

- Percent
- Proportion
- Fraction
- Ratio
- Incidence
- Likelihood
- Probability
- Segment
- Share

# Market Share

Market share is a comparative term, as opposed to an absolute term. Market share is simply the portion of a market that a company controls. The market share can be measured either in terms of revenues (sales) or units sold.

A company can gain market share (percentage) if the market shrinks and it maintains a constant size, or if it grows in an unchanging market.

However, a company losing market share does not mean that its sales decreased, only that they became a smaller entity in the market relative to the whole (the market grew and they stayed the same size, for example).

Similarly, a company could lose sales and still gain market share if the overall market became smaller.

The total market share must always add up to 100%.

# CR Type 5: Strengthen

- All strengthen questions will have either a FACT-CONCLUSION or a FACT-REASON (A causes B) relationship.
- We can never strengthen a fact. We can strengthen only the conclusion or the reason by providing some extra facts. So the model will be:



# Strengthen Questions

- Options have to contain **OUTSIDE (EXTRA) INFORMATION (FACT)**
- Strengthen does not mean PROVE.
- So even mild choices may be true.

# Strengthen

- Example: As the Indian cricket team performed badly in the last World Cup, it should not be sent for the next World Cup.
  - FACT: the Indian cricket team performed badly in the last World Cup
  - Conclusion: it should not be sent for the next World Cup.
- How to strengthen it?

# Terms used...

- strengthens
- supports
- helps
- most justifies
- bolsters
- buttresses

# How to strengthen A causes B

- Show that nothing else causes B
- Show that when A did not happen, B did not happen.
- Show that when B did not happen, A did not happen.
- Show that B does not cause A

# **Strengthen – cause effect...**

Navigation systems found in most aircraft are made with low-power circuitry, which is susceptible to interference. Recently, one plane veered off course during landing, when a passenger turned on a laptop computer. Clearly, aircraft navigation systems are being put at risk by the electronic devices that passengers carry on board, such as cassette players and laptop computers.

**Find at least 2 ways to strengthen it...**

# Process

- ID the conclusion
- Try to come up with your own answer
- New-information choices are welcome
- Strengthen the conclusion with the help of a choice

1. Medical doctor: Sleep deprivation is the cause of many social ills, ranging from irritability to potentially dangerous instances of impaired decision making. Most people today suffer from sleep deprivation to some degree. Therefore we should restructure the workday to allow people flexibility in scheduling their work hours. Which one of the following, if true, would most strengthen the medical doctor's argument?
  - A. The primary cause of sleep deprivation is overwork.
  - B. Employees would get more sleep if they had greater latitude in scheduling their work hours.
  - C. Individuals vary widely in the amount of sleep they require.
  - D. More people would suffer from sleep deprivation today than did in the past if the average number of hours worked per week had not decreased.
  - E. The extent of one's sleep deprivation is proportional to the length of one's workday.

2. Galanin is a protein found in the brain. In an experiment, rats that consistently chose to eat fatty foods when offered a choice between lean and fatty foods were found to have significantly higher concentrations of galanin in their brains than did rats that consistently chose lean over fatty foods. These facts strongly support the conclusion that galanin causes rats to crave fatty foods. Which one of the following, if true, most supports the argument?
- A. The craving for fatty foods does not invariably result in a rat's choosing those foods over lean foods.
  - B. The brains of the rats that consistently chose to eat fatty foods did not contain significantly more fat than did the brains of rats that consistently chose lean foods.
  - C. The chemical components of galanin are present in both fatty foods and lean foods.
  - D. The rats that preferred fatty foods had the higher concentrations of galanin in their brains before they were offered fatty foods.
  - E. Rats that metabolize fat less efficiently than do other rats develop high concentrations of galanin in their brains.

3. In the 18th and 19th centuries, it was believed in many coastal American cities that the waterfront was an undesirable location for residential buildings. As a result, much of the waterfront in these cities was never developed aesthetically and instead was left to industry and commerce. Today, however, waterfront properties are generally seen as prestigious, as evidenced by the large sums paid for homes along the beach front. A developer who wishes to make a large profit would be wise to buy urban waterfront lots and erect residential buildings on them.

**Which of the following, if true, most strongly supports the claim made about urban waterfront properties?**

- A. People today have more money, relatively speaking, to spend on real estate than they did in previous centuries.
- B. Homeowners will be willing to spend large sums on residential properties in traditionally industrial or commercial districts.
- C. Many urban waterfront lots are available for purchase.
- D. Many coastal American cities are encouraging developers to rehabilitate the waterfront through tax incentives.
- E. Properties in interior residential districts in coastal American cities are significantly more expensive than those along the waterfront.

4. Some animals, such as dolphins, dogs, and African grey parrots, seem to exhibit cognitive functions typically associated with higher-order primates such as chimpanzees, gorillas, and humans. Some parrots, for example, have vocabularies of hundreds of words that they can string together in a comprehensible syntax. This clearly shows that humans and primates are not the only animals capable of using language to communicate. One parrot, named Alex, has been known to ask to be petted or kissed and will exhibit aggression if the gesture offered is not the specific one requested.

*Which of the following, if true, would most strengthen the conclusion above?*

- A. Dolphins can be trained to assist divers in ocean rescues.
- B. Gorillas in captivity often learn hand signals for food and water.
- C. Dogs are capable of sensing their owners' moods and often exhibit concern if they sense sadness.
- D. Chimpanzees can memorize long sequences of key punches on machines that dispense food.
- E. Alex does not exhibit aggression when offered a gesture that he specifically requested.

5. In general, jobs are harder to get in times of economic recession because many businesses cut back operations. However, any future recessions in Vargonia will probably not reduce the availability of teaching jobs at government-funded schools. This is because Vargonia has just introduced a legal requirement that education in government-funded schools be available, free of charge, to all Vargonian children regardless of the state of the economy, and that current student-teacher ratios not be exceeded.

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

- A. The current student-teacher ratio at Vargonia's government-funded schools is higher than it was during the most recent period of economic recession.
- B. During recent periods when the Vargonian economy has been strong, almost 25 percent of Vargonian children have attended privately funded schools, many of which charge substantial fees.
- C. Nearly 20 percent more teachers are currently employed in Vargonia's government-funded schools than had been employed in those schools in the period before the last economic recession.
- D. Teachers in Vargonia's government-funded schools are well paid relative to teachers in most privately funded schools in Vargonia, many of which rely heavily on part-time teachers.
- E. During the last economic recession in Vargonia, the government permanently closed a number of the schools that it had funded.

6. The average life expectancy for the United States population as a whole is 73.9 years, but children born in Hawaii will live an average of 77 years, and those born in Louisiana, 71.7 years. If a newlywed couple from Louisiana were to begin their family in Hawaii, therefore, their children would be expected to live longer than would be the case if the family remained in Louisiana.

**Which of the following statements, if true, would most significantly strengthen the conclusion drawn in the passage?**

- A. As population density increases in Hawaii, life expectancy figures for that state are likely to be revised downward.
- B. Environmental factors tending to favor longevity are abundant in Hawaii and less numerous in Louisiana.
- C. Twenty-five percent of all Louisianans who move to Hawaii live longer than 77 years.
- D. Over the last decade, average life expectancy has risen at a higher rate for Louisianans than for Hawaiians.
- E. Studies show that the average life expectancy for Hawaiians who move permanently to Louisiana is roughly equal to that of Hawaiians who remain in Hawaii.

7. A cost-effective solution to the problem of airport congestion is to provide high-speed ground transportation between major cities lying 200 to 500 miles apart. The successful implementation of this plan would cost far less than expanding existing airports and would also reduce the number of airplanes clogging both airports and airways.

**Which of the following, if true, could be proponents of the plan above most appropriately cite as a piece of evidence for the soundness of their plan?**

- A. An effective high-speed ground-transportation system would require major repairs to many highways and mass-transit improvements.
- B. One-half of all departing flights in the nation's busiest airport head for a destination in a major city 225 miles away.
- C. The majority of travelers departing from rural airports are flying to destinations in cities over 600 miles away.
- D. Many new airports are being built in areas that are presently served by high-speed ground-transportation systems.
- E. A large proportion of air travelers are vacationers who are taking long-distance flights.

8. A recent spate of launching and operating mishaps with television satellites led to a corresponding surge in claims against companies underwriting satellite insurance. As a result, insurance premiums shot up, making satellites more expensive to launch and operate. This, in turn, has added to the pressure to squeeze more performance out of currently operating satellites.

**Which of the following, if true, taken together with the information above, best supports the conclusion that the cost of television satellites will continue to increase?**

- A. Since the risk to insurers of satellites is spread over relatively few units, insurance premiums are necessarily very high.
- B. When satellites reach orbit and then fail, the causes of failure are generally impossible to pinpoint with confidence.
- C. The greater the performance demands placed on satellites, the more frequently those satellites break down.
- D. Most satellites are produced in such small numbers that no economies of scale can be realized.
- E. Since many satellites are built by unwieldy international consortia, inefficiencies are inevitable.

# CR Type 6: Evaluate the Argument

- “EVALUATE” means to check the soundness of conclusion...
- All EVALUATE questions will have a FACT-CONCLUSION relationship.
- The given argument will be unsound, i.e., there will be inadequate facts to support the conclusion.
- In order to prove or disprove the argument, one will need more information. This is what the question asks...
  - What extra piece of information will help one evaluate the conclusion better?

# Approach...

- ID the conclusion.
- Take the choices to the extremes.
- **The Extremes Test:** One extreme should weaken and the other should strengthen the conclusion or vice versa.

# An Example...

1. **Advertisement:** Only Gem World sends its jewelry to the most reliable Gem Testing Lab in the country. No other shop sends its jewelry for any kind of testing whatsoever. So buy jewelry from Gem World, the most reliable jewelry shop in town, and be assured of the quality of gems you purchase!

*The answer to which question will help one evaluate the authenticity of the claim made in the advertisement above?*

# Another Example...

2. Because of a rare type of fungus that killed off many cacao trees in Brazil, there was an unusually meager harvest of cocoa beans this year. The wholesale price of cocoa solids and cocoa butter has increased significantly and does not look likely to fall in the foreseeable future. As a result, the retail price of chocolate is certain to increase within six months.

***The answer to which question would provide information relevant to evaluating the claims made in the argument above?***

# Another Example...

3. In an experiment, two different types of recorded music were played for neonates in adjacent nurseries in a hospital. In nursery A, classical music was played; in nursery B, rock music was played. After two weeks, it was found that the babies in nursery A cried less, suffered fewer minor ailments, and gained more weight than did the babies in nursery B.

***In evaluating the validity of the conclusion suggested by the experiment above, it would be most important to know which of the following?***

1. Profits for one of Company X's flagship products have been declining slowly for several years. The CFO investigated and determined that inflation has raised the cost of producing the product but consumers who were surveyed reported that they weren't willing to pay more than the current price. As a result, the CFO recommended that the company stop producing this product because the CEO only wants products whose profit margins are increasing.

**The answer to which of the following questions would be most useful in evaluating whether the CFO's decision to divest the company of its flagship product is warranted?**

- A. Does the company have new and profitable products available with which to replace the flagship product?
- B. Will the rest of Company X's management team agree with the CFO's recommendation?
- C. Are there additional features which could be added to the product and for which consumers might be willing to pay a higher price?
- D. Is there a way to alter the manufacturing or distribution processes in order to reduce the cost to produce the flagship product?
- E. What percentage of Company X's revenues is represented by sales of the flagship product in question?

2. Scientists have determined that an effective way to lower cholesterol is to eat three servings of whole grains every day. Studies have shown that the cholesterol levels of people who did so were significantly lower after six months than were those of people who did not, even though the cholesterol levels of the two groups were the same before the studies began. Clearly, eating whole grains can have an appreciable effect on cholesterol levels.

***The answer to which of the following questions, if true, would be most useful in evaluating the claim about whole grains above?***

- A. Is it realistic to expect people to eat three servings of whole grains per day?
- B. Were the two groups of people in the study involved in the same exercise program?
- C. Can the same drop in cholesterol be achieved through medication?
- D. Did the study continue to track the subjects beyond six months?
- E. Are most consumers aware of the difference between whole grains and processed grains?

3. Guitar strings often go “dead”—become less responsive and bright in tone—after a few weeks of intense use. A researcher whose son is a classical guitarist hypothesized that dirt and oil, rather than changes in the material properties of the string, were responsible.

**Which of the following investigations is most likely to yield significant information that would help to evaluate the researcher’s hypothesis?**

- A. Determining if a metal alloy is used to make the strings used by classical guitarists
- B. Determining whether classical guitarists make their strings go dead faster than do folk guitarists
- C. Determining whether identical lengths of string, of the same gauge, go dead at different rates when strung on various brands of guitars.
- D. Determining whether a dead string and a new string produce different qualities of sound
- E. Determining whether smearing various substances on new guitar strings causes them to go dead

4. The recording industry is fighting a losing battle: it simply does not have the resources to prosecute all of the individuals who illegally download music from the Internet. Because the number of individuals who will be charged with a crime is so limited, the actions of the recording industry will have a minimal impact on the number of people who illegally download music.

**The answer to which of the following questions would best help evaluate the accuracy of the conclusion above?**

- A. Will recording industry lawyers dedicate the majority of their time to prosecuting those who illegally download music?
- B. Is a small minority of individuals responsible for the majority of illegal song downloads?
- C. Do many individuals who illegally download songs share their music files with other Internet users?
- D. Will new Internet security technology permit the recording industry to more quickly and easily identify individuals who illegally download music?
- E. Will the threat of prosecution alter the behavior of those who illegally download music?

5. Columnist: George Orwell's book 1984 has exercised much influence on a great number of this newspaper's readers. One thousand readers were surveyed and asked to name the one book that had the most influence on their lives. The book chosen most often was the Bible; 1984 was second. The answer to which one of the following questions would most help in evaluating the columnist's argument?
- A. How many books had each person surveyed read?
  - B. How many people chose books other than 1984?
  - C. How many people read the columnist's newspaper?
  - D. How many books by George Orwell other than 1984 were chosen?
  - E. How many of those surveyed had actually read the books they chose?

6. The proportion of women among students enrolled in higher education programs has increased over the past decades. This is partly shown by the fact that in 1959, only 11 percent of the women between twenty and twenty-one were enrolled in college, while in 1981, 30 percent of the women between twenty and twenty-one were enrolled in college.

**To evaluate the argument above, it would be most useful to compare 1959 and 1981 with regard to which of the following characteristics?**

- A. The percentage of women between twenty and twenty-one who were not enrolled in college
- B. The percentage of women between twenty and twenty-five who graduated from college
- C. The percentage of women who, after attending college, entered highly paid professions
- D. The percentage of men between twenty and twenty-one who were enrolled in college
- E. The percentage of men who graduated from high school

# CR Type 7: Resolve the Paradox

- Structure:
  - Two seemingly contradictory facts are presented in the passage, creating a paradox (a surprising phenomenon). **F1**  $\leftrightarrow$  **F2**
  - One has to resolve (explain) the Paradox by choosing the most credible choice that explains both sides.

– MODEL:



# Paradox Questions

- No conclusion
- Language of contradiction (But, However, Yet, Although, Paradoxically, Surprisingly)
- Two sides presented (both to be resolved)
- Eliminate Out-of-scope choices
- Choices are taken as TRUE, no matter howsoever absurd / ridiculous / counter-intuitive...

# Terms generally used...

- Resolve
- Explain
- Reconcile
- Justify
- Paradox
- Discrepancy
- Contradiction
- Conflict
- Puzzle

# Paradox Questions

1. An anti-theft device is known to reduce theft, but cars using the antitheft device are stolen at a higher rate than cars without the device.
2. A surgeon has a low success rate while operating, but the director of the hospital claims the surgeon is the best on the staff.
3. Country X contains many rivers that flow down from its high mountains. These rivers have been dammed to harness the hydroelectric power that can be derived from this resource. More than enough power is generated from these dams to meet the country's energy needs. Yet, citizens of Country X often experience power shortages or even outages.

# Paradox Questions

4. Some communities in Florida are populated almost exclusively by retired people and contain few, if any, families with small children. Yet these communities are home to thriving businesses specializing in the rental of furniture for infants and small children.

1. Calories consumed in excess of those with which the body needs to be provided to maintain its weight are normally stored as fat and the body gains weight. Alcoholic beverages are laden with calories. However, those people who regularly drink two or three alcoholic beverages a day and thereby exceed the caloric intake necessary to maintain their weight do not in general gain weight. Which one of the following, if true, most helps to resolve the apparent discrepancy?
  - A. Some people who regularly drink two or three alcoholic beverages a day avoid exceeding the caloric intake necessary to maintain their weight by decreasing caloric intake from other sources.
  - B. Excess calories consumed by people who regularly drink two or three alcoholic beverages a day tend to be dissipated as heat.
  - C. Some people who do not drink alcoholic beverages but who eat high-calorie foods do not gain weight.
  - D. Many people who regularly drink more than three alcoholic beverages a day do not gain weight.
  - E. Some people who take in fewer calories than are normally necessary to maintain their weight do not lose weight.

2. In Asia, where palm trees are non-native, the trees' flowers have traditionally been pollinated by hand, which has kept palm fruit productivity unnaturally low. When weevils known to be efficient pollinators of palm flowers were introduced into Asia in 1980, palm fruit productivity increased-by up to fifty percent in some areas-but then decreased sharply in 1984.

**Which of the following statements, if true, would best explain the 1984 decrease in productivity?**

- A. Prices for palm fruit fell between 1980 and 1984 following the rise in production and a concurrent fall in demand.
- B. Imported trees are often more productive than native trees because the imported ones have left behind their pests and diseases in their native lands.
- C. Rapid increases in productivity tend to deplete trees of nutrients needed for the development of the fruit-producing female flowers.
- D. The weevil population in Asia remained at approximately the same level between 1980 and 1984.
- E. Prior to 1980 another species of insect pollinated the Asian palm trees, but not as efficiently as the species of weevil that was introduced in 1980.

3. Provinces and states with stringent car safety requirements, including required use of seat belts and annual safety inspections, have on average higher rates of accidents per kilometer driven than do provinces and states with less stringent requirements. Nevertheless, most highway safety experts agree that more stringent requirements do reduce accident rates.

**Which one of the following, if true, most helps to reconcile the safety experts' belief with the apparently contrary evidence described above?**

- A. Annual safety inspections ensure that car tires are replaced before they grow old.
- B. Drivers often become overconfident after their cars have passed a thorough safety inspection.
- C. The roads in provinces and states with stringent car safety programs are far more congested and therefore dangerous than in other provinces and states.
- D. Psychological studies show that drivers who regularly wear seat belts often come to think of themselves as serious drivers, which for a few people discourages reckless driving.
- E. Provinces and states with stringent car safety requirements have, on average, many more kilometers of roads than do other provinces and states.

4. Industry experts expect improvements in job safety training to lead to safer work environments. A recent survey indicated, however, that for manufacturers who improved job safety training during the 1980s, the number of on-the-job accidents tended to increase in the months immediately following the changes in the training programs.

**Which one of the following, if true, most helps to resolve the apparent discrepancy in the passage above?**

- A. A similar survey found that the number of on-the-job accidents remained constant after job safety training in the transportation sector was improved.
- B. Manufacturers tend to improve their job safety training only when they are increasing the size of their workforce.
- C. Manufacturers tend to improve job safety training only after they have noticed that the number of on-the-job accidents has increased.
- D. It is likely that the increase in the number of on-the-job accidents experienced by many companies was not merely a random fluctuation.
- E. Significant safety measures, such as protective equipment and government safety inspections, were in place well before the improvements in job safety training.

5. Cigarette companies claim that manufacturing both low- and high-nicotine cigarettes allows smokers to choose how much nicotine they want. However, a recent study has shown that the levels of nicotine found in the blood of smokers who smoke one pack of cigarettes per day are identical at the end of a day's worth of smoking, whatever the level of nicotine in the cigarettes they smoke.

**Which one of the following, if true, most helps to explain the finding of the nicotine study?**

- A. Blood cannot absorb more nicotine per day than that found in the smoke from a package of the lowest-nicotine cigarettes available.
- B. Smokers of the lowest-nicotine cigarettes available generally smoke more cigarettes per day than smokers of high-nicotine cigarettes.
- C. Most nicotine is absorbed into the blood of a smoker even if it is delivered in smaller quantities.
- D. The level of tar in cigarettes is higher in low-nicotine cigarettes than it is in some high-nicotine cigarettes.
- E. When taking in nicotine by smoking cigarettes is discontinued, the level of nicotine in the blood decreases steadily.

6. The tobacco industry is still profitable and projections are that it will remain so. In the United States this year, the total amount of tobacco sold by tobacco-farmers has increased, even though the number of adults who smoke has decreased.

**Each of the following, if true, could explain the simultaneous increase in tobacco sales and decrease in the number of adults who smoke EXCEPT:**

- During this year, the number of women who have begun to smoke is greater than the number of men who have quit smoking.
- The number of teen-age children who have begun to smoke this year is greater than the number of adults who have quit smoking during the same period.
- During this year, the number of nonsmokers who have begun to use chewing tobacco or snuff is greater than the number of people who have quit smoking.
- The people who have continued to smoke consume more tobacco per person than they did in the past.
- More of the cigarettes made in the United States this year were exported to other countries than was the case last year.