GMAT Prep Critical Reasoning 2



Topics: Strengthen or Weaken the Argument, and Paradox

Both Strengthen and Weaken questions ask us to find a *new* piece of information that, if added to the existing argument, will make the conclusion either somewhat more likely to be true (Strengthen) or somewhat less likely to be true (Weaken). In the case of "Strengthen", the new piece of info will serve as evidence that some assumption is actually valid. In the case of "Weaken", the new piece of info will knock down some assumptions: it will serve as evidence that the assumption is invalid.

All "Strengthen" and "Weaken" questions will have either a FACT-CONCLUSION or a FACT REASON (A causes B) relationship. We can never strengthen or weaken a fact. We can strengthen or weaken only the conclusion or the reason by providing some extra facts.

NOTE:

"Strengthen" does not mean "prove beyond ambiguity". Similarly, "Weaken" does not mean "Completely destroy". So, mild options may be true.





Common words for "Weaken" Question Stems:

Weaken, Attack, Undermine, Refute, Argue Against, Call Into Question, Cast Doubt, Challenge, Flaw, Vulnerable, Counter, Damage, etc.

Common words for "Strengthen" Question Stems:

Strengthens, Provides Support, Adequately Helps, Most Justifies, Bolsters, Buttresses, Reinforce, Validates, Clarifies, etc.

Option Traps

- One of the most common traps is the Reverse Logic answer: the question asks us to weaken, but a trap answer choice strengthens the conclusion instead or vice-versa.
- Some options may just repeat the argument or just say the reverse of the argument without adding any new evidence to support or weaken it.
- Most wrong answers will have "No Tie to Conclusion" they will neither strengthen nor weaken the conclusion. Some of these will be obviously wrong, but these answers can be tricky.





Common "Numbers & Percentages" Misconceptions

- Higher Percentages automatically lead to Higher Numbers, and vice-versa
- Lower Percentages automatically lead to Lower Numbers, and vice versa
- Large numbers automatically mean large percentages, and small numbers automatically mean small percentages, and vice versa

Common terms to indicate "Numbers"

Amount, Quantity, Sum, Total, Count, Tally, Fewer

Common terms to indicate "Percentages"

Proportion, Fraction, Ratio, Incidence, Likelihood, Probability, Segment, Share





1. Jackson City has outgrown its current fire station. The existing station cannot be expanded to fit the city's needs because of building code restrictions. Real estate in the area of the existing station is far more expensive than building space on the west side of the city. Since the price to purchase a building is a considerable portion of the total cost, it would be more economical to move the fire station to the west side of the city.

Which of the following, if true, most undermines the argument's conclusion?

- A. City residents have expressed approval of the plan to move the city's fire station to the west side of the city.
- B. The fire station, if moved to the west side of the city, must still conform to Jackson City's citywide sanitation requirements.
- C. If the fire station is moved to the west side of the city, insurance rates will skyrocket because the west side of the city has higher arson and vandalism rates.
- D. If the fire station is moved to the west side of the city, residents there will have to contend with increased noise and traffic.
- E. Ample water supply already exists to support the fire station on the west side of the city.





2. Wine Company Representative: The corks of red wine bottles pose a threat to the environment because they are treated with chemicals that are especially toxic in landfills. However, the new cork that our company developed, which will be adopted by the entire red wine industry, represents a solution. Since the new cork is natural and not treated with chemicals, when the industry completes its transition to the new cork, there will no longer be any threat to landfills from red wine corks.

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

- A. The industry's transition to the new red wine corks will take years, allowing thousands of old corks to pollute landfills.
- B. Even after the industry's transition to new corks, a large number of wine bottles with old corks will continue to be consumed.
- C. The new corks take considerably longer to produce.
- D. Production of the new cork emits more toxic fumes than were emitted in the production of the old cork.
- E. The new corks are more expensive than the old corks.





3. Three years after the Hydraulic Falls Dam was built, none of the six fish species native to the area was still reproducing adequately in the river below the dam. Because the dam reduced the average temperature of the water from approximately 40 degrees to approximately 10 degrees, biologists have hypothesized that sharp increases in water temperature must be involved in signaling the affected species to begin their reproduction activities.

Which of the following statements, if true, would most strengthen the scientist's hypothesis?

- A. The native fish species were still able to reproduce in nearby streams, where the annual temperature range remains approximately 40 degrees.
- B. Before the dam was built, the river annually overflowed its banks, creating temporary backwaters that were used as breeding areas for the local fish population.
- C. The lowest temperature ever recorded in the river prior to dam construction was 30 degrees, whereas the lowest river temperature after construction was completed has been 40 degrees.
- D. Non-native fish species, introduced after the dam was completed, have begun competing with the native species for food.
- E. Five of the species of fish native to the dam area are not known to be native to any other river.





4. 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 rats 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 choose clean foods.
- C. The same chemical components are present in both fatty and lean foods.
- D. The rats that preferred fatty foods had 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.





5. In Colorado subalpine meadows, non-native dandelions co-occur with a native flower, the larkspur. Bumblebees visit both species, creating the potential for interactions between the two species with respect to pollination. In a recent study, researchers selected 16 plots containing both species; all dandelions were removed from eight plots; the remaining eight control plots were left undisturbed. The control plots yielded significantly more larkspur seeds than the dandelion-free plots, leading the researchers to conclude that the presence of dandelions facilitates pollination (and hence seed production) in the native species by attracting more pollinators to the mixed plots.

Which of the following, if true, most undermines the researchers' reasoning?

- A. Bumblebees preferentially visit dandelions over larkspurs in mixed plots.
- B. If left unchecked, non-native species like dandelions quickly crowd out native species.
- C. Seed germination is a more reliable measure of a species' fitness than seed production.
- D. Soil disturbances can result in fewer blooms, and hence lower seed production.
- E. In mixed plots, pollinators can transfer pollen from one species to another to augment seed production.





6. 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, had 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 rise?

- 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.





7. 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 beachfront. 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 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.





8. In response to viral infection, the immune systems of mice typically produce antibodies that destroy the virus by binding to proteins on its surface. Mice infected with a herpesvirus generally develop keratitis, a degenerative disease affecting part of the eye. Since proteins on the surface of cells in this part of the eye closely resemble those on the herpesvirus surface, scientists hypothesize that these cases of keratitis are caused by antibodies to herpesvirus.

Which of the following, if true, gives the greatest additional support to the scientists' hypothesis?

- A. Other types of viruses have surface proteins that closely resemble proteins found in various organs of mice.
- B. There are mice that are unable to form antibodies in response to herpes infections, and these mice contract herpes at roughly the same rate as other mice.
- C. Mice that are infected with a herpesvirus but do not develop keratitis produce as many antibodies as infected mice that do develop keratitis.
- D. There are mice that are unable to form antibodies in response to herpes infections, and these mice survive these infections without ever developing keratitis.
- E. Mice that have never been infected with a herpesvirus can sometimes develop keratitis.





9. A political party considered by many citizens extreme and incompetent is working hard at overcoming what it perceives as an unfair and prejudiced public image. The group believes it is stereotyped simply because it opposes any pre-emptive military action, which is unpopular, and calls for a 50% reduction in carbon emissions, a cut far more severe than most citizens want.

Which of the following, if true, would most weaken the party's belief about the source of its poor public image?

- A. The current ruling political party, whose popularity is at near record levels, launched a pre-emptive military strike against a neighbouring country three weeks ago.
- B. A neighbouring country recently suffered a surprise attack that devastated its country and polluted its environment.
- C. A popular rival party bans unilateral attacks to defend the homeland and unconditionally supports a 60% reduction in carbon emissions.
- D. A recent poll showed that a party whose most prominent candidate supports preemptive war and minimal carbon restrictions is quite popular.
- E. Twenty years ago, a pacifist party successfully and popularly ruled the country.





10. A large pharmaceutical company has recently developed an antibiotic that has been shown to be highly effective at treating a variety of infections. The drug is obtained from the scales of the rare tutu fish, which is only found in the wild reefs off Santo Island in the South Pacific. Since it takes the scales from 1000 fish to make a single kilogram of the antibiotic, it follows that continued production of the drug will lead to the extinction of the tutu fish.

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

- A. The antibiotic made from the tutu fish's scales is only available by prescription.
- B. Because tutu fish are rare, they are also expensive.
- C. The inhabitants of Santo Island regard the meat of the tutu fish as a delicacy.
- D. Tutu fish breed well in captivity and can be cultivated on fish farms.
- E. Santo Island is difficult to reach since it does not have an airstrip.





11. Political Advertisement: Mayor Delmont's critics complain about the jobs that were lost in the city under Delmont's leadership. Yet the fact is that not only were more jobs created than were eliminated, but each year since Delmont took office the average pay for the new jobs created has been higher than that year's average pay for jobs citywide. So, it stands to reason that throughout Delmont's tenure, the average paycheck in this city has been getting steadily bigger.

Which of the following, if true, most seriously weakens the argument in the advertisement?

- A. The unemployment rate in the city is higher today than it was when Mayor Delmont took office.
- B. The average pay for jobs in the city was at a ten-year low when Mayor Delmont took office.
- C. Each year during Mayor Delmont's tenure, the average pay for jobs that were eliminated has been higher than the average pay for jobs citywide.
- D. Most of the jobs eliminated during Mayor Delmont's tenure were in declining industries.
- E. The average pay for jobs in the city is currently lower than it is for jobs in the suburbs surrounding the city.





12. A proposed ordinance requires the installation in new homes of sprinklers automatically triggered by the presence of a fire. However, a home builder argued that because more than 90 percent of residential fires are extinguished by a household member, residential sprinklers would only marginally decrease property damage caused by residential fires.

Which of the following, if true, would most seriously weaken the home builder's argument?

- A. Most individuals have no formal training in how to extinguish fires.
- B. Since new homes are only a tiny percentage of available housing in the city, the new ordinance would be extremely narrow in scope.
- C. The installation of smoke detectors in new residences costs significantly less than the installation of sprinklers.
- D. In the city where the ordinance was proposed, the average time required by the fire department to respond to a fire was less than the national average.
- E. The largest proportion of property damage that results from residential fires is caused by fires that start when no household member is Present.





Explain the Discrepancy (Paradox)

These passages consist of two seemingly contradictory facts, creating a paradox. One has to resolve the Paradox by choosing the most credible choice that explains both sides.

Our task on Paradox based questions is to find an answer that resolves or fixes the discrepancy - that makes all of the information make sense together. In short, we are trying to find a third premise that will help the two Premises to make sense together.

The question stems typically include terms such as

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

Note:

- The arguments do not contain any conclusion but have two apparently contrary premises.
- Options are taken as TRUE, no matter how implausible or counter-intuitive they seem.
- If an option focuses on only one of the two premises and not the other, it is a wrong option.
- Any option that merely reinforces the contradiction without finding a resolution to the same is a wrong option.





13. Over the last three years, the city of Las Vegas has grown in population at a rate of six percent per year. Over the same period of time, however, water usage inside the city of Las Vegas is down almost fifteen percent.

Each of the following, if true, could help to explain the simultaneous decline in water usage and increase in population in Las Vegas, EXCEPT

- A. Due to drought awareness campaigns, the average citizen in Las Vegas uses almost thirty percent less water now than he or she did three years ago.
- B. Two years ago, the city instituted a popular new incentive program for citizens to tear out high water-consuming lawns and replace them with low water-consuming desert landscaping.
- C. The city council has proposed a moratorium on the construction of high water-consuming golf courses starting in two years.
- D. Three years ago, a mining company that consumed vast amounts of water operated within the city limits; now that company is out of business.
- E. The mayor ordered that all of the city's hundreds of fountains be shut off, reducing water use due to evaporation considerably.





14. A recent article in one of the nation's leading newspapers noted that despite the government's warning about peanut butter likely being contaminated by salmonella and the government's subsequent recall of a limited amount of peanut butter, 90% of grocery store shoppers surveyed said that they did not plan to change their peanut butter purchasing habits. Nevertheless, roughly two months after the limited recall and one month after the leading newspaper published its article, the country's peanut butter manufacturers reported that same-store sales to grocery store shoppers fell 75% year-over-year.

Which of the following, if true, best explains the apparent paradox above?

- A. The initial survey of shoppers failed to consider the effect of subsequent cuts in the price of peanut butter.
- B. Fearing additional instances of contamination and subsequent lawsuits, many retailers that sold peanut butter removed the product voluntarily from their shelves.
- C. A report similar to the report that appeared in the leading newspaper appeared in one of the nation's tabloid magazines on the same day.
- D. Days before the newspaper conducted its survey, a widely respected bacterial research specialist published an op-ed article in a major newspaper arguing that the threat from salmonella-infected peanut butter was smaller than the government would later contend.
- E. A study published after the government recall of some peanut butter stated that individuals intended to change the type of Jelly and bread they purchased





15. As a result of implementing an experimental farming system that combined aggressive new fertilization, deep irrigation, and speculative pesticides, the yield on crops at a farm in central California grew consistently and considerably over the past six years. However, yields this year unexpectedly plummeted, causing the farm's owners considerable financial difficulties.

Which of the following statements, if true, best explains the paradox?

- A. As a result of a serious and recent economic recession, the market for the products the farm produced shrank in size during the past year.
- B. Other farms that began using the experimental system at about the same time also reported an unexpected plummet in yields this year.
- C. The central California region where the farm in question is located experienced a drought 9 years ago, 3 years ago, and this past year.
- D. A different experimental system, used on a different crop, failed after two years at a farm in Iowa. Scientists later discovered that chemicals involved in this different system slowly poisoned the soil.
- E. Significant and sustained increases in agricultural productivity eventually lead to an exhaustion of important nutrients inland.





16. The average age of residents in Sunset City is well over 70 years of age and the populace is composed almost entirely of retirees with extremely few families that have young children. However, Sunset City is also known for its many boutiques that specialize in selling clothing for infants and toddlers.

Which of the following, if true, best reconciles the seeming discrepancy above?

- A. The children's clothing boutiques in Sunset City purchase their clothing from wholesalers in Sunrise City, where there are several families with small children.
- B. The few children that do live in Sunset City do not have particularly large wardrobes.
- C. The residents of Sunset City are known to spend more on healthcare than residents of nearby cities.
- D. The residents of Sunset City are generally wealthy and are known to spend large amounts of money buying gifts for their grandchildren and great-grandchildren living in other cities.
- E. Sunset City is not located on a major highway.





17. A milepost on the towpath read "21" on the side facing the hiker as she approached it and "23" on its back. She reasoned that the next milepost forward on the path would indicate that she was halfway between one end of the path and the other. However, the milepost one mile further on read "20" facing her and "24" behind.

Which of the following, if true, would explain the discrepancy described above?

- A. The numbers on the next milepost had been reversed.
- B. The numbers on the mileposts indicate kilometers, not miles.
- C. The facing numbers indicate miles to the end of the path, not miles from the beginning.
- D. A milepost was missing between the two the hiker encountered.
- E. The mileposts had originally been put in place for the use of mountain bikers, not for hikers.





18. A factory manager at Artitus Industries suggested that tools be assigned to individual employees rather than shared within each workshop. Employees with their own tools would have more incentive to maintain the tools properly, as each employee would suffer all of the costs of improperly maintaining his or her tools. However, several months after Artitus began assigning tools to individual employees in one of its two workshops, it was found that the shared tools in the other workshop had been better maintained.

Which of the following, if true, most helps to explain Artitus's finding?

- A. If one user of shared tools fails to keep them in perfect condition, others are likely to begin to neglect the tools even more, with the result that the tools soon become unusable.
- B. When tools are shared, the condition of any individual tool affects all users at least somewhat.
- C. An employee using shared tools might be able to increase productivity by neglecting to maintain them.
- D. More companies assign tools individually than share them among employees.
- E. The damage from any individual user's failure to properly maintain tools is more difficult to determine with shared tools than with individual tools.





Additional Practice Questions

19. Arts advocate: Few universities require that students who are specializing in science and technology take many art courses. However, real progress in science and technology requires an element of creativity, which the arts foster. Thus, to help science and technology students succeed in their careers, universities should increase the number of art courses required for them.

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

- A. Universities required more art courses for science and technology students in the past.
- B. Participation in art courses increases students' creative thinking in their science and technology courses.
- C. More students who are interested in art would specialize in science and technology if the number of art courses required for those programs were increased.
- D. Some of the most prominent scientists began their careers as artists.
- E. Discussion of science and technology topics in art courses increases creative thinking among students in those courses.





20. Loss of the Gocha mangrove forests has caused coastal erosion, reducing fish populations and requiring the Gocha Fishing Cooperative (GFC) to partially fund dredging and new shore facilities. However, as part of its subsidiary businesses, the GFC has now invested in a program to replant significant parts of the coast with mangrove trees. Given income from a controlled harvest of wood with continuing replanting, the mangrove regeneration effort makes it more likely that the cooperative will increase its net income.

Which of the following, if true, would most strengthen the argument that mangrove replanting will increase the Gocha cooperative's net income?

- A. The cost of dredging and shore facilities was shared with the local government.
- B. The GFC will be able to hire local workers to assist with the mangrove replanting.
- C. The GFC derives 10 percent of its revenue from salt-production facilities in an area previously cleared of mangroves.
- D. Mangrove forests tend to increase the commercial fish populations in coastal fishing grounds.
- E. A controlled harvesting of mangrove wood by the GFC would have little effect on coastal erosion.





21. Economist: In 2015, the average per-person amount paid for goods and services purchased by consumers in Country X was the equivalent of \$17,570 in United States dollars, just 30 percent of the corresponding figure of \$58,566 for Country Y. Yet in 2015, there was already a substantial middle class in Country X that had discretionary income for middle-class consumer goods such as new vehicles, computers, or major household appliances, while a significant portion of the middle class in Country Y did not have sufficient income to purchase such items.

Which of the following, if true, most helps explain the discrepancy in the relationships described by the economist?

- A. There are many consumer goods, such as household appliances, that are produced in Country X to be sold in the Country Y market.
- B. The volume of trade between Country X and Country Y is increasing rapidly in both directions.
- C. The economy of Country Y is recovering from a downturn that affected both Country Y and Country X.
- D. Country X residents pay much less than their Country Y counterparts for housing, transportation, and child care.
- E. In Country Y as well as in Country X, there are few assembly-line jobs in factories that pay a middle-class wage.





22. A company that manufactures plastic products from recyclable plastic is, surprisingly, unconcerned that economic conditions may worsen, despite analysts' belief that consumers would then consider ecofriendly plastic products an expensive luxury. But the company reasons that it will be able to lower its prices because, in a weakened economy, other ecofriendly plastic manufacturers are likely to fail. Demand among manufacturers for recyclable plastics as raw materials would then plummet, creating an oversupply of such materials, making them less expensive for the manufacturer to purchase and thus lowering the company's costs.

Which of the following, if true, most weakens the company's reasoning?

- A. Smaller ecofriendly plastic manufacturers are more likely to fail in a weakened economy than larger ecofriendly manufacturers are.
- B. Some retailers whose sales include various companies' ecofriendly plastic products have struggled in recent years despite the overall good economy.
- C. Consumers would likely soon learn of the oversupply of recyclable plastics and cease recycling them, significantly raising manufacturers' raw-material costs.
- D. Retailers, including retailers that cater to consumers seeking certain types of ecofriendly products, may lose some business if economic conditions worsen.
- E. The plastics used by the company in its products were, after a recent investigation by a regulatory body, declared to be safe for consumers.





23. Editorial: The roof of Northtown's municipal equipment-storage building collapsed under the weight of last week's heavy snowfall. The building was constructed recently and met local building-safety codes in every particular, except that the nails used for attaching roof supports to the building's columns were of a smaller size than the codes specify for this purpose. Clearly, this collapse exemplifies how even a single, apparently insignificant departure from safety standards can have severe consequences.

Which of the following, if true, most seriously weakens the editorial's argument?

- A. The only other buildings to suffer roof collapses from the weight of the snowfall were older buildings constructed according to less exacting standards than those in the codes.
- B. The amount of snow that accumulated on the roof of the equipment-storage building was greater than the predicted maximum that was used in drawing up the safety codes.
- C. Because the equipment-storage building was not intended for human occupation, some safety-code provisions that would have applied to an office building did not apply to it.
- D. The municipality of Northtown itself has the responsibility for ensuring that buildings constructed within its boundaries meet the provisions of the building safety codes.
- E. Because the equipment-storage building was used for storing snow-removal equipment, the building was almost completely empty when the roof collapsed.



24. Suncorp, a new corporation with limited funds, has been clearing large sections of the tropical Amazon Forest for cattle ranching. This practice continues even though greater profits can be made from rubber tapping, which does not destroy the forest, than from cattle ranching, which does destroy the forest.

Which of the following, if true, most helps to explain why Suncorp has been pursuing the less profitable of the two economic activities mentioned above?

- A. The soil of the Amazon Forest is very rich in nutrients that are important in the development of grazing lands.
- B. Cattle-ranching operations that are located in tropical climates are more profitable than cattle-ranching operations that are located in cold-weather climates.
- C. In certain districts, profits made from cattle ranching are more heavily taxed than profits made from any other industry.
- D. Some of the cattle that are raised on land cleared in the Amazon are killed by wildcats.
- E. The amount of money required to begin a rubber-tapping operation is twice as high as the amount needed to begin a cattle ranch.





25. More and more law firms specializing in corporate taxes are paid on a contingency-fee basis. Under this arrangement, if a case is won, the firm usually receives more than it would have received if it had been paid on the alternate hourly rate basis. If the case is lost, the firm receives nothing. Most firms are likely to make more under the contingency-fee arrangement.

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

- A. Firms that work exclusively under the hourly rate arrangement spend, on average, fewer hours on cases that are won than on cases that are lost.
- B. Some litigation can last for years before any decision is reached, and, even then, the decision may be appealed.
- C. Firms under the contingency-fee arrangement still pay their employees on an hourly basis.
- D. Since the majority of firms specialize in certain kinds of cases, they are able to assess accurately their chances of winning each potential case.
- E. Firms working under the contingency-fee arrangement take in fewer cases per year than do firms working under the hourly rate arrangement.





Home Assignment

		\mathcal{L}	Revise Class Questions		25
		Home assignment	Solve and Review 20 questions	~ 45 minutes	20







Thank you