Command of Evidence: Support/Weaken Questions

Module 2 Homework

Ready for a step up? Here are twenty questions at the level of the harder Module 2, with the shapes mixed and a few more weaken questions than you'll usually meet. Most are built on hard official questions, so their skeletons will look familiar when you meet the originals. To keep pace with the real test (about 71 seconds a question), give yourself 24 minutes. When a choice sounds relevant, make it earn its place: would it actually change your mind about the claim?

Question 1

California's Monterey Style house, two stories of thick adobe wrapped by a long wooden balcony, first appeared in the 1800s, and historians have long disputed where it came from. To Gaspar Arredondo, the house was a Spanish Colonial transplant: settlers arriving in the 1770s, he wrote, brought both the adobe wall and the balcony with them. Nora Belcourt reads it instead as a California invention. Spanish-trained builders supplied the adobe, she grants, but the house's form was worked out on the spot by newcomers from the eastern United States, who adapted their framing methods to local materials and coastal weather.

Which finding, if true, would most directly support Belcourt's argument?

A) Structural surveys reveal that the roof pitches of Monterey Style houses closely resemble those of public buildings constructed in eighteenth-century Seville, Spain.

B) Many early Monterey Style houses were built of adobe bricks shaped and sun-dried by the same methods that Spanish settlers had brought to California in the 1770s.

C) The second story and long wooden balconies that distinguish the style appear in no California building erected before the 1830s, when carpenters from New England began arriving.

D) Architectural historians did not begin using the term "Monterey Style" until several decades after the earliest examples of the style had been built.

Question 2

Larvae of a mountain caddisfly species build protective cases by binding streambed gravel together with silk, an energetically expensive process. Yet their streams are littered with hollow reed fragments that could shelter a larva immediately and at no cost. Field observations show that larvae that move into these fragments nevertheless spin tapered silk linings near both openings. Because the larvae depend heavily on gills along their abdomens to take in oxygen, researchers hypothesize that the silk is necessary not merely because it protects the larvae but also because the tapered lining channels a steady current of oxygen-rich water across their gills, a benefit that an unmodified reed fragment does not provide.

Which finding, if true, would most directly support the researchers' hypothesis?

A) In streams with many predatory fish, larvae attach significantly larger gravel particles to their cases than do larvae living in otherwise similar streams that have few predatory fish.

B) Caddisfly silk stays flexible even after long immersion in water across a wide range of mineral concentrations, from very soft to very hard.

C) Larvae living in reed fragments eat about the same amount of algae as larvae living in gravel cases of similar internal volume.

D) In flow-tank experiments, larvae prevented from producing silk could still shelter in reed fragments, but water flow across their gills dropped sharply and fewer of them survived.

Question 3

In the semiconductor industry, a sudden shortage of dynamic random-access memory (DRAM) chips typically triggers a sharp rise in unit prices that can last for many months. Because large manufacturers buy chips by the millions, even small differences in what they pay per chip add up quickly. Economist Ilse Marvanek hypothesizes that during such shortages, large consumer electronics firms benefit from "anticipatory stockpiling": buying large quantities of chips at the onset of a shortage to protect themselves against later price peaks. Marvanek argues that this strategy lowers a firm's average total cost per chip over the course of the shortage, giving it an advantage over smaller firms that must keep buying chips at inflated prices.

Which finding, if true, would most directly undermine Marvanek's hypothesis?

A) Small electronics manufacturers often report cutting their total production during DRAM shortages because the chips they need have become too expensive.

B) Data from earlier shortages show that the costs of financing, storing, and insuring large chip inventories typically exceeded what firms saved by avoiding later price increases.

C) During the most recent shortage, several large manufacturers reported that their shipping and logistics costs stayed roughly the same as they had been in previous years.

D) Many large firms say that they prefer long-term supply contracts to stockpiling because contracts are simpler for their purchasing departments to manage.

Question 4

A protein can do its job only while it keeps its folded shape, and in a plant cell a thin coat of water molecules, often called a hydration shell, helps it hold that shape. In arid regions, though, intense sunlight and scarce rain can dry plants so thoroughly that the shell is lost; the proteins then unfold, a process called denaturation, and clump into useless masses. The desert resurrection plant *Selaginella lepidophylla* can survive years of near-total drying. Most plants cannot tolerate such dehydration. This one, however, produces large amounts of the sugar trehalose, and biologists have hypothesized that the sugar works by vitrification: as the cell dries, trehalose hardens into a glasslike solid that holds proteins in their folded shape.

Which finding, if true, would most directly support the biologists' hypothesis?

A) As *S. lepidophylla* dries, trehalose molecules attach to the surfaces of its proteins in place of the lost water, and the dried cell contents stay soft rather than hardening.

B) Dried resurrection-plant cells hold their proteins, still folded, in a rigid, noncrystalline trehalose mass; in resurrection plants altered to lack trehalose, the dried proteins unfold and clump.

C) As it dries, *S. lepidophylla* curls its stems into a tight ball, and it unfurls them again within a few hours of being rewetted by rain.

D) *S. lepidophylla* stores most of its trehalose in its stems rather than in its leaves.

Question 5

In her final decade, the painter Rosa Imre (1921–1998) changed her approach dramatically. Her earlier canvases had been crowded with figures, market scenes, and dense patterns that left almost no surface unpainted; her late works, by contrast, often leave half or more of the canvas completely bare. Many critics at the time assumed that age and failing eyesight had simply slowed her down and that the bare areas were unfinished. Art historian Simone Laurent disagrees. She argues that in these late works, Imre treated empty space not as unfinished background but as the subject of the painting itself, inviting viewers to sense an absence.

Which quotation from an art critic's review of Imre's late paintings would best support Laurent's argument?

A) "In *Market Morning with Ilka*, the stalls are painted with the precision of Imre's early market scenes, but Ilka never appears: only her shadow crosses the bare canvas at the center, where the lines of every awning converge."

B) "The bare canvas in Imre's late work is never idle: it isolates each of the few figures she still painted, so that a lone fishmonger or child stands out with a clarity her crowded early scenes never allowed."

C) "Visitors to Imre's 1996 retrospective spent far longer in the gallery of her late, half-empty canvases than in the rooms that held the crowded market scenes of her early career."

D) "Imre's late canvases are quieter by design: as she told an interviewer in 1990, she had 'stopped trying to fill every corner,' and her early pictures now struck her as 'a kind of shouting.'"

Question 6

Epidemiologists investigating outbreaks of encephalitis among horses in a dry valley noticed that cases occurred almost exclusively on ranches next to wetlands where great blue herons nest each summer. Horses on ranches farther from the wetlands remained healthy. The team found the same newly identified virus in sick horses and in many of the herons. At first the link was puzzling: the virus does not pass directly from birds to horses, and in laboratory trials, horses housed with infected herons, or exposed to the birds' droppings and tissues, never became infected. Nevertheless, the researchers concluded that the heron population is the main source of the outbreaks.

Which finding, if true, would most directly support the researchers' conclusion?

A) Horses on ranches near the wetlands show more variation in their immune responses to common bacteria than horses stabled on ranches farther away do.

B) Horses that fell ill were, on average, older than the horses that stayed healthy on the same ranches.

C) Mosquitoes that feed on infected herons later carry the virus in their saliva, and these mosquitoes also bite horses on nearby ranches.

D) Horses that recovered from the infection were immune to the virus the following summer, even on ranches next to the wetlands.

Question 7

Health policy researchers recently examined whether a mobile app could help patients recover after surgery. Traditionally, patients leaving the clinic received paper discharge summaries; under a new initiative, several clinics instead delivered instructions only through an app featuring digital checklists and links to instructional videos. The study found that patients using the app followed their medication schedules significantly more consistently than patients who received paper summaries. The researchers hypothesize that the app's dynamic interface is responsible: by letting patients check off each dose and track their progress in real time, it keeps the medication schedule in front of them and reinforces how important it is.

Which finding from the study, if true, would most directly weaken the researchers' hypothesis?

A) Regardless of how they received their instructions, patients who had worked in health care followed their medication schedules more consistently than patients from other backgrounds did.

B) Patients in both groups received instructions containing exactly the same recovery steps, medication schedules, and emergency contact information.

C) Patients using the app reported watching the instructional videos far less often than they used the digital checklists to track their doses.

D) App records show that most patients in the app group stopped opening the dose checklist within two days, long before their medication schedules ended.

Question 8

Microalgae farms grow *Haematococcus pluvialis* to extract astaxanthin, a valuable pigment sold as a dietary supplement and used in cosmetics. Running the farms' photobioreactors, which must be kept free of contamination and climate-controlled, requires costly monitoring equipment, specialized lighting, and trained staff, large fixed costs that every facility must pay no matter how much it produces. Market analysts noted that newer, automated facilities often run their growth tanks at less than half of capacity during their first years, yet they consistently earn a higher net profit per gram of astaxanthin than older, traditional facilities running at full capacity. The analysts argue that this advantage stems from economies of scale rather than from superior extraction technology.

Which finding, if true, would most directly support the analysts' argument?

A) Even when heavily underutilized, an automated facility's tanks hold several times as much culture as a traditional facility's tanks hold when full.

B) The automated extraction machinery in newer facilities recovers a much higher percentage of pure astaxanthin from each liter of culture than the older methods used in traditional facilities do.

C) Traditional facilities often lose entire batches of culture when regional power outages disrupt the cooling systems that keep their photobioreactors at a steady temperature.

D) Rising demand for high-purity astaxanthin has pushed up wholesale prices for all producers, regardless of the size of their facilities.

Question 9

A hand-drawn map of a river valley in what is now western Pennsylvania, made around 1758, bears the name of a British army officer, Captain Thomas Reed, who led a surveying party through the region that year. The map has long been treated as Reed's own work and is often cited as an example of British military mapmaking during the French and Indian War. Historian Amelia Grant, who studies eighteenth-century frontier maps, disagrees. She argues that the map was actually drawn by an Indigenous guide who traveled with Reed's party, and that Reed simply added his own name to it.

Which finding, if true, would most directly weaken Grant's argument?

A) Reed's field notebook holds a rough draft of the map in his own hand, complete with the compass bearings and paced distances he used to draw it.

B) The map shows the valley's rivers, trails, and river crossings in great detail, including several small streams that later maps of the valley omitted.

C) The map uses symbols for villages and hunting grounds that appear on other maps known to have been made by Indigenous mapmakers in the region.

D) The map was found in a trunk of Reed's papers that his family donated to a library more than a century after his death.

Question 10

After a severe global shortage, wholesale prices for natural vanilla (*Vanilla planifolia*) quadrupled over two years. Greenhouse operations on the island of Réunion, which had planted their vines several years earlier, quickly brought those vines into production and nearly tripled their marketable output within twelve months. In contrast, traditional smallholder farms in Madagascar's Sava region, which grow most of the world's vanilla, increased their combined output by less than 3% over the same two years. Agricultural economists attribute the Madagascar farms' low price elasticity of supply—their failure to raise output much despite soaring prices—mainly to the slow maturation of vanilla vines rather than to a lack of credit or available land.

Which finding, if true, would most directly support the economists' attribution?

A) Greenhouse-grown vanilla from Réunion is cured using the same traditional sweating and sun-drying methods that Madagascar's smallholder farmers have used for generations.

B) Shipping and customs costs for exporting vanilla from Madagascar to European processing centers fell steadily throughout the two years of high prices.

C) Major flavor companies paid substantial premiums for cured Madagascar vanilla over greenhouse-grown vanilla throughout the shortage, citing its richer aroma and higher vanillin content.

D) Two years into the price surge, Sava farmers who had used interest-free loans to plant vines on new land were harvesting no more vanilla than before.

Question 11

Plant breeders spent more than a decade developing a new variety of wheat for a drought-prone farming region, selecting for plants with deep roots and thick, waxy leaves that lose little water. In field trials across the region, the new variety consistently produced larger harvests than the standard variety in dry years and about the same harvests in wet ones. Yet a survey of the region's farmers found that those who had switched to the new variety earned less money from their wheat, on average, than farmers who had kept growing the standard variety, even across a run of dry years.

Which finding, if true, would best account for this discrepancy?

A) Seed for the new variety costs farmers about the same as seed for the standard variety, and both kinds of seed are sold by the same local suppliers.

B) Mills in the region pay much less for the new variety's grain than for the standard variety's, because its flour makes poorer bread.

C) Farmers who switched to the new variety were spread evenly across the region's drier eastern districts and its wetter western districts.

D) During the driest years of the field trials, the new variety produced nearly twice as much grain per acre as the standard variety did.

Question 12

In the dim middle layer of the open ocean, many species of hatchetfish have specialized organs called ventral photophores that give off adjustable, downward-directed light. Many deep-sea animals use light to lure prey or startle predators, but marine biologists hypothesize that hatchetfish rely on their photophores for counter-illumination, a form of camouflage. By matching the brightness and color of the faint sunlight filtering down from the surface, a fish could erase its own silhouette and become hard for predators looking up from below to see. Such camouflage could work only where some sunlight still reaches, so a fish would need to keep adjusting its glow as the light above it changes.

Which finding, if true, would most directly support the biologists' hypothesis?

A) The light-producing chemicals in hatchetfish photophores are the same ones found in the glowing lures that some anglerfish use to attract prey.

B) In laboratory tanks with predators, hatchetfish kept switching on their photophores even in total darkness, when there was no sunlight to create a silhouette.

C) In tanks lit dimly from above, predators looking upward attacked fish with covered photophores far more often than fish whose photophores matched the light.

D) Hatchetfish are most abundant at depths of 200 to 1,000 meters, where they feed mainly on small crustaceans that rise toward the surface at night.

Question 13

Many makers of educational apps insist that heavy tablet use leaves young children's handwriting unharmed, and some argue that tracing letters on a screen even builds the same skills that pencil and paper do. Researchers Ines Halvorsen and Marcus Teague followed two groups of five-year-olds for six months. The groups were matched at the start on letter-formation precision and grip stability; one group used tablets for more than ten hours a week, and the other had no regular tablet access. At the end of the six months, the researchers used standardized assessments to compare the groups' letter-formation precision, grip stability, and manual dexterity.

Which finding from the study, if true, would most directly weaken the app makers' claim?

A) At the end of the study, children with no regular access to tablets formed letters more precisely than children who used them over ten hours a week.

B) Children who used tablets for more than ten hours per week formed letters more precisely at the end of the six-month study than they had at its beginning.

C) Children in both groups showed a significant increase in their interest in drawing and other art activities over the course of the study.

D) In both groups, children with older siblings at home attempted complex writing tasks more often than other children did.

Question 14

Architect Lina Okoro has designed public libraries in several cities, and the buildings share a feature that sets them apart from most libraries. Instead of placing the main reading room at the back of the building or on an upper floor, away from traffic, Okoro runs it along the street behind a wall of floor-to-ceiling windows, so that the tables, the shelves, and the readers themselves are in full view of the sidewalk. Architecture critic Kofi Asante argues that Okoro uses this design for two reasons: to make reading a visible, public activity and to beckon people passing by to come inside.

Which quotation from an architecture historian would best support Asante's argument?

A) "Okoro sited her reading rooms along the street frontage so that the act of reading within would remain continuously exposed to the gaze of pedestrians outside."

B) "Okoro's objective was to render reading a conspicuously public act, one that passersby observing the patrons behind the glass would perceive as an implicit invitation to enter."

C) "Okoro's preference for floor-to-ceiling glazing was fundamentally environmental: such a facade admits daylight throughout the day, reducing the building's reliance on artificial lighting and sparing readers' eyes."

D) "Okoro's glazed walls afford readers within an uninterrupted prospect of the street and its shifting light, an amenity that conventional library design has largely withheld from its patrons."

Question 15

Through PRIME, a shared-trucking cooperative in Sumatra, coffee processors too small to sign contracts with commercial carriers book space on communal trucks bound for the export hubs on the coast. Skipping a booked pickup costs nothing, but it sends a processor to the back of the queue for future bookings. Village processors skip pickups far more often than town processors do, usually holding their coffee back for a week or more until they have a larger load. Logistics analysts say this is not carelessness: the village processors give up priority on purpose, because doing so leaves them with more money from each kilogram they sell.

Which finding, if true, would most directly support the analysts' claim?

A) Export buyers grade each bag separately and pay the same price per kilogram for a given grade, however many bags from one processor arrive together.

B) Village processors handle a wider range of coffee varieties than town processors do, and they sell to a larger number of different buyers.

C) For village processors, the high cost of each long trip to the nearest pickup point remains largely fixed, whether the load is meager or fills their vehicle.

D) Many village processors also sell part of each harvest to local traders, who pay less per kilogram than export buyers do but pay cash on the spot.

Question 16

In forest ecology, saplings growing beneath large mature trees sometimes survive at higher rates than saplings growing in open clearings. Forest ecologist Petra Szalai suspected that this advantage comes from common mycorrhizal networks, underground webs of fungal threads through which mature trees may pass carbon compounds, the products of photosynthesis, to struggling saplings. To separate this mechanism from simple differences in competition above ground, Szalai's team cleared weeds and shrubs from every experimental plot and equalized the plots' light exposure, soil moisture, and soil nutrients. After three growing seasons, the researchers concluded that connection to mature trees through these networks increased sapling growth and survival.

Which finding from the study, if true, would most directly support the researchers' conclusion?

A) Saplings moved from open clearings to spots beneath mature trees grew noticeably faster within a single season, before any fungal connections to the trees could have formed.

B) Different fungal species moved dissolved nutrients and carbon compounds through their threads at different rates as soil moisture changed over the seasons.

C) Carbon-13 fed only to mature trees later turned up in connected saplings, which outgrew and outlived similar saplings whose fungal links had been cut.

D) Mature trees surrounded by dense clusters of saplings grew slightly taller over the summer than mature trees with few saplings nearby.

Question 17

Materials engineer Mirela Ostrander has been studying how crews prepare steel bridge beams for repainting. Most crews remove old paint and rust by abrasive blasting, firing grit at the steel through high-pressure hoses. Blasting throws off clouds of dust that crews must contain, and chemical strippers now remove old paint and loose rust nearly as well, with far less mess and, on many jobs, at lower cost. Maintenance budgets are tight, and agencies look for every possible saving, so why do most crews still blast? Ostrander hypothesizes that blasting provides a second, less visible benefit: it leaves the steel surface microscopically rough, giving the new coating a texture to grip so that it adheres securely.

Which finding, if true, would most directly support Ostrander's hypothesis?

A) Crews that switched to chemical strippers report large reductions in labor and equipment costs compared with crews that still rely on abrasive blasting.

B) Crews that use abrasive blasting must wear protective suits and work behind screens that keep the grit from reaching passing traffic.

C) Surveys indicate that experienced crews hesitate to adopt chemical strippers mainly because of the cost of retraining workers and buying new equipment.

D) Crews blast even steel beams that have already been chemically stripped down to clean, bare metal before recoating.

Question 18

The earliest land plants reproduced with spores, and most spore-bearing plants need a film of water to reproduce, because their sperm must swim to reach an egg. During the Late Devonian, roughly 370 million years ago, the first seed plants appeared. Seed plants do not need free water for fertilization, and their embryos are sealed inside a tough coat that keeps them from drying out. Paleobotanists Clara Whitcombe and Idris Kalloway argue that the seed habit allowed early seed plants to spread beyond the wet lowlands where land plants had first flourished and into inland regions that were dry for much of the year.

Which finding, if true, would most directly support Whitcombe and Kalloway's argument?

A) Plant fossils are nearly absent from rocks formed in dry inland basins before about 370 million years ago; in younger such rocks, most are seed plants.

B) Plant fossils have been found in approximately equal numbers in rocks formed in dry inland basins before about 370 million years ago and in younger such rocks.

C) Many early seed plants had fernlike leaves, and some were first classified as ferns before their seeds were finally found.

D) Early seed plants are common in Late Devonian rocks that formed in wet coastal lowlands, where spore-bearing plants also flourished.

Question 19

Most natural diamonds are colorless or faintly yellow, but a few owe vivid hues to tiny flaws in the crystal: traces of boron make a diamond blue, while natural radiation can turn one green by knocking carbon atoms out of place. Diamonds of either color are rare and can sell for many times the price of colorless stones. For several riverbed deposits where blue and green diamonds lie side by side, a team of mineralogists has proposed that the green stones began as boron-bearing blue ones and changed color only after long exposure to radiation from radioactive minerals in the surrounding gravel.

Which finding, if true, would most directly weaken the team's hypothesis?

A) The green diamonds in the deposits contain boron in concentrations similar to those found in the blue diamonds from the same deposits.

B) Blue diamonds from the deposits are, on average, somewhat larger than the green diamonds found alongside them.

C) Most of the radioactive minerals in the riverbed deposits are concentrated in the upper layers of the gravel.

D) Blue stones in the deposits received radiation doses comparable to those received by green stones with similar boron content over the same period.

Question 20

In markets with only a few large sellers, competing firms can keep prices high by quietly limiting their output, even without any formal agreement. Simple game-theory models predict, however, that such tacit collusion is unstable, because each firm is tempted to secretly undercut its rivals' prices and win extra sales. Yet during a period of falling global demand, the four producers of a specialty chemical used in batteries kept their contract prices high for more than eighteen months, each staying close to its publicly announced production target. Economists contend that this unusual stability lasted because every producer knew its rivals could immediately detect any secret discount, not because of mutual trust or long-standing business relationships.

Which finding, if true, would most directly support the economists' contention?

A) Battery makers consistently paid more for the high-purity grade of the chemical than glassmakers paid for a lower-purity grade with fewer uses.

B) Secret discounts, once common among the producers, stopped just before the eighteen months began, when a new network started showing each producer its rivals' prices instantly.

C) Trade publications reported total shipments of the chemical each quarter, but only months after the shipments and without any prices for individual firms.

D) In interviews, executives of the four producers frequently cited long-standing professional relationships as a key reason that competition among them had stayed orderly.