

TASK 2 - 25.2.25

ID: 6a6bbac3

Number and Origin of Clamshell Tools Found at Different Levels Below the Surface in Neanderthal Cave

Depth of tools found below surface in cave (meters)	Clamshells that Neanderthals collected from the beach	Clamshells that Neanderthals harvested from the seafloor
3-4	99	33
6-7	1	0
4-5	2	0
2-3	7	0
5-6	18	7

Studying tools unearthed at a cave site on the western coast of Italy, archaeologist Paola Villa and colleagues have determined that prehistoric Neanderthal groups fashioned them from shells of clams that they harvested from the seafloor while wading or diving or that washed up on the beach. Clamshells become thin and eroded as they wash up on the beach, while those on the seafloor are smooth and sturdy, so the research team suspects that Neanderthals prized the tools made with seafloor shells. However, the team also concluded that those tools were likely more challenging to obtain, noting that

Which choice most effectively uses data from the table to support the research team's conclusion?

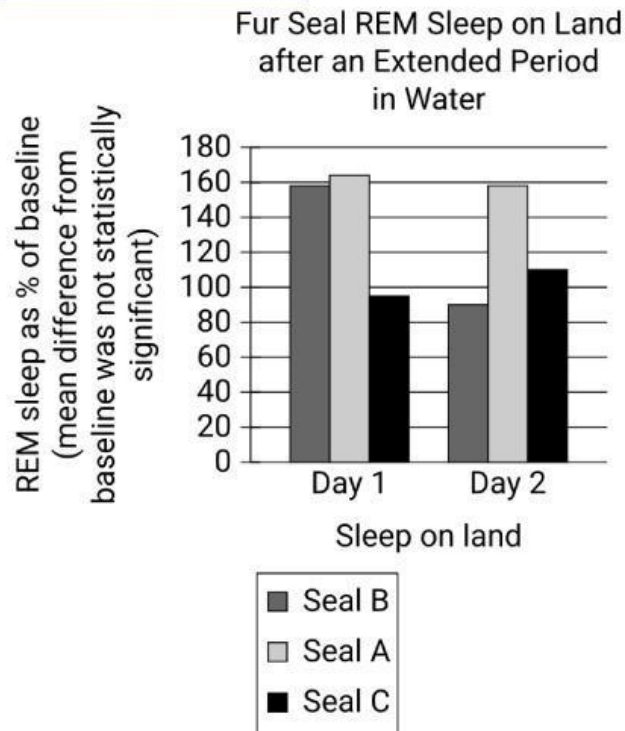
- A. at each depth below the surface in the cave, the difference in the numbers of tools of each type suggests that shells were easier to collect from the beach than to harvest from the seafloor.
- B. the highest number of tools were at a depth of 3-4 meters below the surface, which suggests that the Neanderthal population at the site was highest during the related period of time.
- C. at each depth below the surface in the cave, the difference in the numbers of tools of each type suggests that Neanderthals preferred to use clamshells from the beach because of their durability.
- D. the higher number of tools at depths of 5-6 meters below the surface in the cave than at depths of 4-5 meters below the surface suggests that the size of clam populations changed over time.

ID: 6f626ae5

"To You" is an 1856 poem by Walt Whitman. In the poem, Whitman suggests that readers, whom he addresses directly, have not fully understood themselves, writing, _____

Which quotation from "To You" most effectively illustrates the claim?

- A. "You have not known what you are, you have slumber'd upon yourself / all your life, / Your eyelids have been the same as closed most of the time."
- B. "These immense meadows, these interminable rivers, you are immense / and interminable as they."
- C. "I should have made my way straight to you long ago, / I should have blabb'd nothing but you, I should have chanted nothing / but you."
- D. "I will leave all and come and make the hymns of you, / None has understood you, but I understand you."

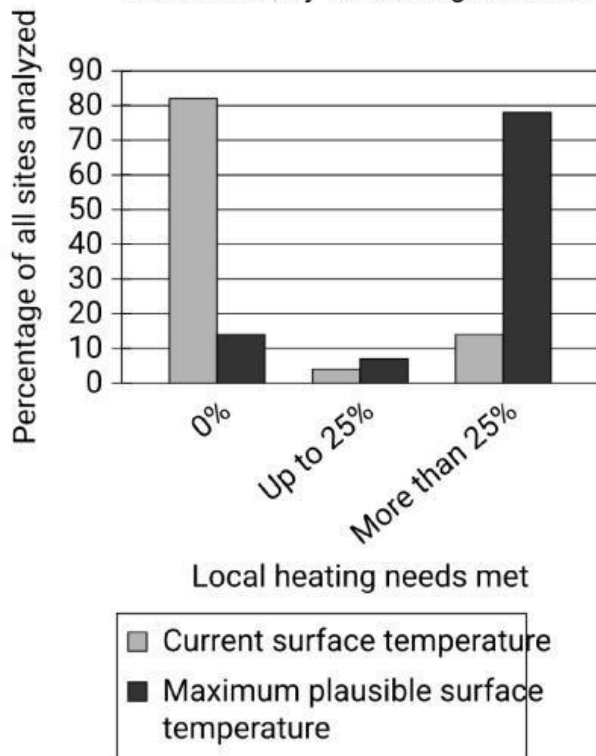


Research suggests that REM sleep in animals is homeostatically regulated: animals compensate for periods of REM sleep deprivation by increasing subsequent REM sleep. When on land, fur seals get enough REM sleep, but during the weeks they're in the water, they get almost none. In a study of fur seals' sleep habits, researchers recorded the REM sleep (as a percentage of baseline) of fur seals once they had returned to land. They concluded that REM sleep may not be homeostatically regulated in fur seals, citing as evidence the fact that the seals in the study _____

Which choice most effectively uses data from the graph to complete the text?

- A. didn't show significantly less REM sleep during the second day after returning to land than they did during the first day.
- B. showed no significant differences from one another in baseline levels of REM sleep.
- C. didn't consistently demonstrate a significant increase in REM sleep after their period of deprivation in the water.
- D. showed no significant difference between REM sleep after returning to land and REM sleep while in the water.

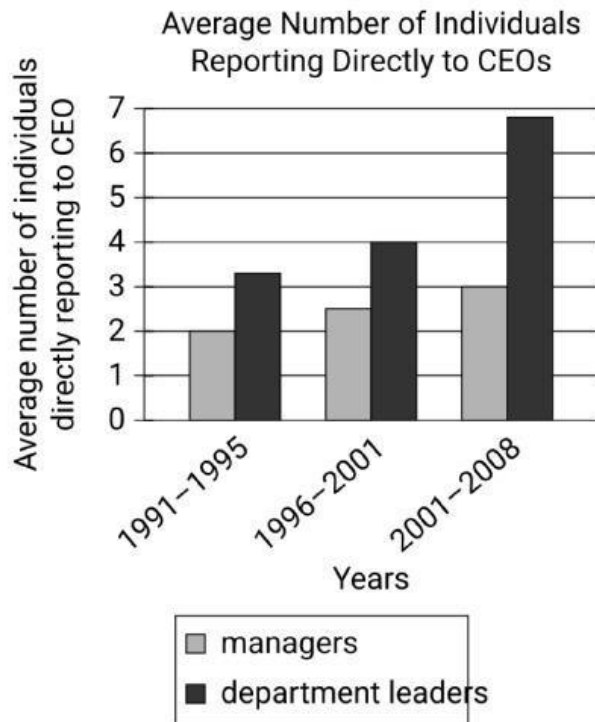
Home Heating Needs Met with Subsurface Thermal Pollution for Two Temperature Conditions, by Percentage of Sites



Urbanization, industrialization, and the warming climate create thermal pollution (excess heat) in the shallow subsurface soil. Susanne A. Benz and colleagues analyzed thousands of sites on three continents under one scenario in which surface temperature remains at the current level and under another in which the surface reaches the maximum plausible temperature. They then categorized each site according to the percentage of local home heating needs that could be met using this excess subsurface heat. The team concluded that if surface temperature approaches the maximum plausible level, the percentage of sites where thermal pollution could feasibly contribute to meeting home heating needs will increase.

Which choice best describes data in the graph that support Benz and colleagues' conclusion?

- A. Under both temperature conditions, less than 10% of sites were in the up-to-25% group, but at the maximum plausible surface temperature, almost 80% of sites could have all their local heating needs met by thermal pollution.
- B. At current surface temperatures, more than 80% of the sites have no need for supplemental local home heating from subsurface thermal pollution, but at the maximum plausible surface temperature, more than 70% of sites exhibit significantly greater home heating needs.
- C. At current surface temperatures, more than 80% of sites can meet, at most, 25% of local home heating needs with subsurface thermal pollution, but at the maximum plausible surface temperature, more than 80% of sites can meet greater than 25% of local home heating needs.
- D. At current surface temperatures, more than 80% of the sites cannot use subsurface thermal pollution to meet any portion of local home heating needs, but at the maximum plausible surface temperature, that percentage drops below 20%.



Considering a large sample of companies, economics experts Maria Guadalupe, Julie Wulf, and Raghuram Rajan assessed the number of managers and leaders from different departments who reported directly to a chief executive officer (CEO). According to the researchers, the findings suggest that across the years analyzed, there was a growing interest among CEOs in connecting with more departments in their companies.

Which choice best describes data from the graph that support the researchers' conclusion?

- A. The average numbers of managers and department leaders reporting directly to their CEO didn't fluctuate from the 1991–1995 period to the 2001–2008 period.
- B. The average number of managers reporting directly to their CEO was highest in the 1996–2001 period.
- C. The average number of department leaders reporting directly to their CEO was greater than the average number of managers reporting directly to their CEO in each of the three periods studied.
- D. The average number of department leaders reporting directly to their CEO rose over the three periods studied.

ID: 85439572

Roasted green chiles are a popular ingredient in Southwestern cuisine, but the traditional roasting method of burning propane is not environmentally friendly. To see if solar power could provide a better alternative, engineer Kenneth Armijo and his team roasted batches of green chiles using between 38 and 42 heliostats, which are devices that concentrate sunlight. The team was successful in reaching the same roasting temperature used in traditional propane roasting, but they found that propane yielded faster results. While the fastest solar-roasted green chiles took six minutes, batches using propane took only four. Armijo hypothesizes that they can reduce the roasting time for solar-roasted green chiles by using more heliostats.

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

- A. The temperature inside the roasting drum is distributed more evenly when roasting green chiles with solar power than with propane.
- B. Attempts to roast green chiles using 50 heliostats yields results in fewer than six minutes.
- C. Green chile connoisseurs prefer the flavor of solar-roasted green chiles over the flavor of propane-roasted green chiles.
- D. The skins of solar-roasted green chiles are easier to peel than the skins of propane-roasted green chiles.

ID: 701126bc

In superfluorescence, electrical charges known as dipoles emit light in synchronized bursts so intense that they are visible to the eye. Until recently, this phenomenon has only been observed at extremely cold temperatures because dipoles cannot synchronize at higher temperatures. But in a study, Melike Biliroglu and colleagues observed superfluorescence at room temperature in thin films made of perovskite and other similarly crystalline materials; the researchers propose that the formation of shock-absorbing quasiparticles called polarons in the material protects dipoles from thermal interference.

Based on the text, how are polarons believed to be involved in the superfluorescence observed in Biliroglu and colleagues' study?

- A. Polarons enable superfluorescent bursts to cross from one crystalline material to another.
- B. Polarons allow for the dipoles to synchronize despite higher temperatures.
- C. Polarons accelerate the dipoles' release of superfluorescent bursts.
- D. Polarons decrease the intensity of the superfluorescent burst.

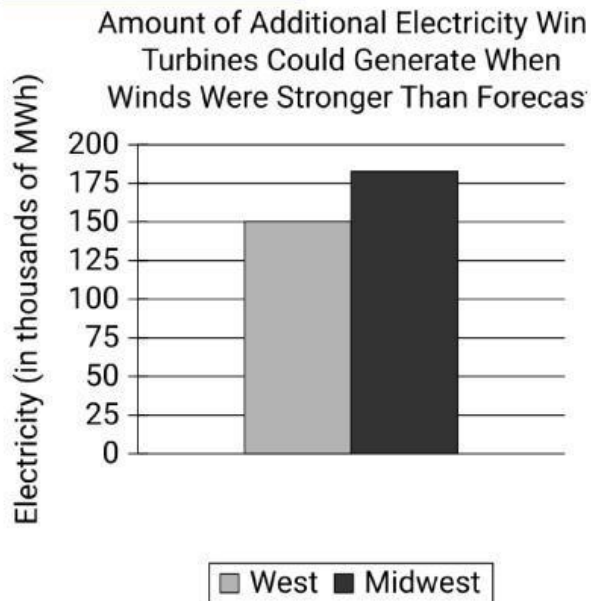
ID: c83e0b43

O Pioneers! is a 1913 novel by Willa Cather. In the novel, Cather depicts Alexandra Bergson as a person who takes comfort in understanding the world around her: _____

Which quotation from *O Pioneers!* most effectively illustrates the claim?

- A. "She looked fixedly up the bleak street as if she were gathering her strength to face something, as if she were trying with all her might to grasp a situation which, no matter how painful, must be met and dealt with somehow."
- B. "She had never known before how much the country meant to her. The chirping of the insects down in the long grass had been like the sweetest music. She had felt as if her heart were hiding down there, somewhere, with the quail and the plover and all the little wild things that crooned or buzzed in the sun. Under the long shaggy ridges, she felt the future stirring."
- C. "Alexandra drove off alone. The rattle of her wagon was lost in the howling of the wind, but her lantern, held firmly between her feet, made a moving point of light along the highway, going deeper and deeper into the dark country."
- D. "Alexandra drew her shawl closer about her and stood leaning against the frame of the mill, looking at the stars which glittered so keenly through the frosty autumn air. She always loved to watch them, to think of their vastness and distance, and of their ordered march. It fortified her to reflect upon the great operations of nature, and when she thought of the law that lay behind them, she felt a sense of personal security."

ID: a9040290



Electric companies that use wind turbines rely on weather forecasts to predict the maximum amount of power, in megawatt-hours (MWh), they can generate using wind so that they can determine how much they'll need to generate from other sources. When winds are stronger than they were forecast to be, however, the predicted maximum amount of electricity wind turbines could generate will be too low. For example, the graph shows that for the West region, the winds were _____

Which choice most effectively uses data from the graph to complete the example?

- A. strong enough to generate about 150 thousand more MWh of electricity from wind turbines.
- B. so weak that the electricity from wind turbines was about 175 thousand MWh less than predicted.
- C. so weak that the electricity from wind turbines was about 150 thousand MWh less than predicted.
- D. strong enough to generate about 175 thousand more MWh of electricity from wind turbines.

ID: ac285054

The domestic sweet potato (*Ipomoea batatas*) descends from a wild plant native to South America. It also populates the Polynesian Islands, where evidence confirms that Native Hawaiians and other Indigenous peoples were cultivating the plant centuries before seafaring first occurred over the thousands of miles of ocean separating them from South America. To explain how the sweet potato was first introduced in Polynesia, botanist Pablo Muñoz-Rodríguez and colleagues analyzed the DNA of numerous varieties of the plant, concluding that Polynesian varieties diverged from South American ones over 100,000 years ago. Given that Polynesia was peopled only in the last three thousand years, the team concluded that _____

Which choice most logically completes the text?

- A. the cultivation of the sweet potato in Polynesia likely predates its cultivation in South America.
- B. Polynesian peoples likely acquired the sweet potato from South American peoples only within the last three thousand years.
- C. human activity likely played no role in the introduction of the sweet potato in Polynesia.
- D. Polynesian sweet potato varieties likely descend from a single South American variety that was domesticated, not wild.