Preliminary SAT/National Merit Scholarship Qualifying Test
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2015 Practice Test #1

PSAT/NMSQT®

Preliminary SAT/National Merit Scholarship Qualifying Test

IMPORTANT REMINDERS

1

A No. 2 pencil is required for the test. Do not use a mechanical pencil or pen.

2

Sharing any questions with anyone is a violation of Test Security and Fairness policies and may result in your scores being canceled.

This cover is representative of what you'll see on test day.

Questions 38-47 are based on the following passages.

Passage 1 is adapted from Stewart Brand, "The Case for Reviving Extinct Species." ©2013 by the National Geographic Society. Passage 2 is adapted from the editors at *Scientific American*, "Why Efforts to Bring Extinct Species Back from the Dead Miss the Point." ©2013 by Nature America, Inc.

Passage 1

Many extinct species—from the passenger pigeon to the woolly mammoth—might now be reclassified as "bodily, but not genetically, extinct." They're dead, but their DNA is recoverable from museum specimens and fossils, even those up to 200,000 years old.

Thanks to new developments in genetic technology, that DNA may eventually bring the animals back to life. Only species whose DNA is too old to be recovered, such as dinosaurs, are the ones to consider totally extinct, bodily and genetically.

But why bring vanished creatures back to life? It will be expensive and difficult. It will take decades. It won't always succeed. Why even try?

Why do we take enormous trouble to protect endangered species? The same reasons will apply to species brought back from extinction: to preserve biodiversity, to restore diminished ecosystems, to advance the science of preventing extinctions, and to undo harm that humans have caused in the past.

Furthermore, the prospect of de-extinction is profound news. That something as irreversible and final as extinction might be reversed is a stunning realization. The imagination soars. Just the thought of mammoths and passenger pigeons alive again invokes the awe and wonder that drives all conservation at its deepest level.

Passage 2

The idea of bringing back extinct species holds obvious gee-whiz appeal and a respite from a steady stream of grim news. Yet with limited intellectual bandwidth and financial resources to go around, de-extinction threatens to divert attention from the modern biodiversity crisis. According to a 2012 report from the International Union for Conservation of Nature, some 20,000 species are currently in grave danger of going extinct. Species today are vanishing in such great numbers—many from hunting and habitat destruction—that the trend has been called a sixth mass extinction, an event on par with such die-offs as the one that befell the dinosaurs 65 million years ago. A program to restore extinct species poses a risk of selling the public on a false promise that technology alone can solve our ongoing environmental woes—an implicit assurance that if a species goes away, we can snap our fingers and bring it back.

Already conservationists face difficult choices about which species and ecosystems to try to save, since they cannot hope to rescue them all. Many countries where poaching and trade in threatened species are rampant either do not want to give up the revenue or lack the wherewithal to enforce their own regulations. Against that backdrop, a costly and flamboyant project to resuscitate extinct flora and fauna in the name of conservation looks irresponsible: Should we resurrect the mammoth only to let elephants go under? Of course not.

That is not to say that the de-extinction enterprise lacks merit altogether. Aspects of it could conceivably help save endangered species. For example, extinct versions of genes could be reintroduced into species and subspecies that have lost a dangerous amount of genetic diversity, such as the black-footed ferret and the northern white rhino. Such investigations, however, should be conducted under the mantle of preserving modern biodiversity rather than conjuring extinct species from the grave.

38

The author of Passage 1 suggests that the usefulness of de-extinction technology may be limited by the

A) amount of time scientists are able to devote to genetic research.

B) relationship of an extinct species to contemporary ecosystems.

C) complexity of the DNA of an extinct species.

D) length of time that a species has been extinct.

CONTINUE

[1] One of the **2** big reasons behind workers' lack of sleep is the work itself. [2] To combat the problem of sleep deprivation in a demanding work environment, some companies have begun allowing workers to take naps. [3] The hours the average American **3** spend working have increased dramatically since the 1970s, making it hard for many workers to get a good night's sleep. [4] Although employees who sleep on the job are often considered lazy and unproductive, napping in the workplace has been shown to improve workers' efficiency and quality of life. [5] As long as companies continue to demand long hours from **4** workers, and managers should champion napping as a means to keep employees happy, healthy, and functional. **5**

2

A) NO CHANGE
B) main things leading up to
C) huge things about
D) primary causes of

3

A) NO CHANGE
B) have spent
C) spends
D) are spent

4

A) NO CHANGE
B) workers; managers
C) workers, managers,
D) workers, managers

5

To make this paragraph most logical, sentence 3 should be placed

A) where it is now.
B) before sentence 1.
C) after sentence 1.
D) after sentence 4.

14

For what value of h is $24 = \frac{h}{10} - 6$?

15

What is the value of a if $(2a + 3) - (4a - 8) = 7$?

16

If x is not equal to zero, what is the value of $\frac{4(3x)^2}{(2x)^2}$?

17

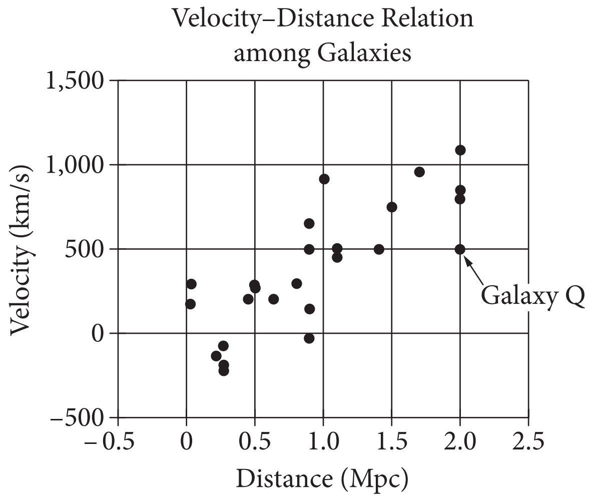
If $x - 2$ is a factor of $x^2 - bx + b$, where b is a constant, what is the value of b ?

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section.

Questions 22-24 refer to the following information.

In 1929, the astronomer Edwin Hubble published the data shown. The graph plots the velocity of galaxies relative to Earth against the distances of galaxies from Earth.



Hubble's data can be modeled by the equation $v = 500d$, where v is the velocity, in kilometers per second, at which the galaxy is moving away from Earth and d is the distance, in megaparsecs, of the galaxy from Earth. Assume that the relationship is valid for larger distances than are shown in the graph. (A megaparsec (Mpc) is 3.1×10^{19} kilometers.)

22

According to Hubble's data, how fast, in meters per second, is Galaxy Q moving away from Earth?

A) 2×10^6 m/s

B) 5×10^5 m/s

C) 5×10^2 m/s

D) 2.5×10^2 m/s

23

There are four galaxies shown in the graph at approximately 0.9 Mpc from Earth. Which of the following is closest to the range of velocities of these four galaxies, in kilometers per second?

A) 100

B) 200

C) 450

D) 700

24

Based on the model, what is the velocity, in kilometers per second, of a galaxy that is 15 Mpc from Earth?

A) 7,500 km/s

B) 5,000 km/s

C) 1,100 km/s

D) 750 km/s