# Tucson International Academy

## *Academia Internacional de Tucson*

**Homework Packet for Twelveth Grade**

**Week 21**

**Name**_____

**Week Starts on/ Due on** _____

Each week you are to complete your homework packet and turn it on the day the teacher assigns. Part of the homework is reading 45 minutes a day. This can be done in after school care and they can read to a younger sibling or an adult as well. Weekend reading is encouraged, each week students can get credit for reading on Saturday and/or Sunday. Reading each day is very important to help each student get better at this skill.

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Weekly Home Reading Record

| Day | Reading Material | Amount of Time | How many pages |
|---|---|---|---|
| Weekend | | | |
| Monday | | | |
| Tuesday | | | |
| Wednesday | | | |
| Thursday | | | |

Total Time Reading: Hours_____ Minutes_____

Student Signature_____ Date_____

Parent Signature_____ Date_____

36

How would Paine most likely respond to Burke's statement in lines 30-34, Passage 1 ("As the . . . born")?

A) He would assert that the notion of a partnership across generations is less plausible to people of his era than it was to people in the past.

B) He would argue that there are no politically meaningful links between the dead, the living, and the unborn.

C) He would question the possibility that significant changes to a political system could be accomplished within a single generation.

D) He would point out that we cannot know what judgments the dead would make about contemporary issues.

37

Which choice provides the best evidence for the answer to the previous question?

A) Lines 41-43 ("Every . . . it")

B) Lines 43-45 ("The vanity . . . tyrannies")

C) Lines 56-58 ("It is . . . accommodated")

D) Lines 67-72 ("What . . . time")

38

Which choice best describes how Burke would most likely have reacted to Paine's remarks in the final paragraph of Passage 2?

A) With approval, because adapting to new events may enhance existing partnerships.

B) With resignation, because changing circumstances are an inevitable aspect of life.

C) With skepticism, because Paine does not substantiate his claim with examples of governments changed for the better.

D) With disapproval, because changing conditions are insufficient justification for changing the form of government.

39

Which choice provides the best evidence for the answer to the previous question?

A) Lines 1-4 ("To avoid . . . state")

B) Lines 7-9 ("he should . . . solicitude")

C) Lines 27-29 ("It is . . . perfection")

D) Lines 34-38 ("The municipal . . . community")

40

Which choice best states the relationship between the two passages?

A) Passage 2 challenges the primary argument of Passage 1.

B) Passage 2 advocates an alternative approach to a problem discussed in Passage 1.

C) Passage 2 provides further evidence to support an idea introduced in Passage 1.

D) Passage 2 exemplifies an attitude promoted in Passage 1.

41

The main purpose of both passages is to

A) suggest a way to resolve a particular political struggle.

B) discuss the relationship between people and their government.

C) evaluate the consequences of rapid political change.

D) describe the duties that governments have to their citizens.

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CONTINUE

**Questions 42-52 are based on the following passage and supplementary material.**

This passage is adapted from Carolyn Gramling, "Source of Mysterious Medieval Eruption Identified." ©2013 by American Association for the Advancement of Science.

About 750 years ago, a powerful volcano erupted somewhere on Earth, kicking off a centuries-long cold snap known as the Little Ice Age. Identifying the volcano responsible has been tricky.

That a powerful volcano erupted somewhere in the world, sometime in the Middle Ages, is written in polar ice cores in the form of layers of sulfate deposits and tiny shards of volcanic glass. These cores suggest that the amount of sulfur the mystery volcano sent into the stratosphere put it firmly among the ranks of the strongest climate-perturbing eruptions of the current geological epoch, the Holocene, a period that stretches from 10,000 years ago to the present. A haze of stratospheric sulfur cools the climate by reflecting solar energy back into space.

In 2012, a team of scientists led by geochemist Gifford Miller strengthened the link between the mystery eruption and the onset of the Little Ice Age by using radiocarbon dating of dead plant material from beneath the ice caps on Baffin Island and Iceland, as well as ice and sediment core data, to determine that the cold summers and ice growth began abruptly between 1275 and 1300 C.E. (and became intensified between 1430 and 1455 C.E.). Such a sudden onset pointed to a huge volcanic eruption injecting sulfur into the stratosphere and starting the cooling. Subsequent, unusually large and frequent eruptions of other volcanoes, as well as sea-ice/ocean feedbacks persisting long after the aerosols have been removed from the atmosphere, may have prolonged the cooling through the 1700s.

Volcanologist Franck Lavigne and colleagues now think they've identified the volcano in question: Indonesia's Samalas. One line of evidence, they note, is historical records. According to Babad Lombok, records of the island written on palm leaves in Old Javanese, Samalas erupted catastrophically before the end of the 13th century, devastating surrounding villages—including Lombok's capital at the time, Pamatan—with ash and fast-moving sweeps of hot rock and gas called pyroclastic flows.

The researchers then began to reconstruct the formation of the large, 800-meter-deep caldera [a basin-shaped volcanic crater] that now sits atop the volcano. They examined 130 outcrops on the flanks of the volcano, exposing sequences of pumice—ash hardened into rock—and other pyroclastic material. The volume of ash deposited, and the estimated height of the eruption plume (43 kilometers above sea level) put the eruption's magnitude at a minimum of 7 on the volcanic explosivity index (which has a scale of 1 to 8)—making it one of the largest known in the Holocene.

The team also performed radiocarbon analyses on carbonized tree trunks and branches buried within the pyroclastic deposits to confirm the date of the eruption; it could not, they concluded, have happened before 1257 C.E., and certainly happened in the 13th century.

It's not a total surprise that an Indonesian volcano might be the source of the eruption, Miller says. "An equatorial eruption is more consistent with the apparent climate impacts." And, he adds, with sulfate appearing in both polar ice caps—Arctic and Antarctic—there is "a strong consensus" that this also supports an equatorial source.

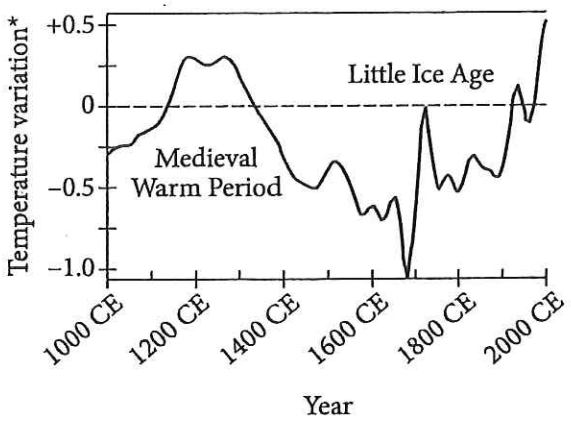
Another possible candidate—both in terms of timing and geographical location—is Ecuador's Quilotoa, estimated to have last erupted between 1147 and 1320 C.E. But when Lavigne's team examined shards of volcanic glass from this volcano, they found that they didn't match the chemical composition of the glass found in polar ice cores, whereas the Samalas glass is a much closer match. That, they suggest, further strengthens the case that Samalas was responsible for the medieval "year without summer" in 1258 C.E.

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CONTINUE

Estimated Temperature in Central England
1000 CE to 2000 CE




*Variation from the 1961-1990 average temperature, in °C, represented at 0.

Adapted from John P. Rafferty, "Little Ice Age." Originally published in 2011. ©2014 by Encyclopedia Britannica, Inc.

**42**

The main purpose of the passage is to

A) describe periods in Earth's recent geologic history.

B) explain the methods scientists use in radiocarbon analysis.

C) describe evidence linking the volcano Samalas to the Little Ice Age.

D) explain how volcanic glass forms during volcanic eruptions.

**43**

Over the course of the passage, the focus shifts from

A) a criticism of a scientific model to a new theory.

B) a description of a recorded event to its likely cause.

C) the use of ice core samples to a new method of measuring sulfates.

D) the use of radiocarbon dating to an examination of volcanic glass.

**44**

Which choice provides the best evidence for the answer to the previous question?

A) Lines 17-25 ("In 2012 . . . 1455 C.E.")

B) Lines 43-46 ("The researchers . . . atop the volcano")

C) Lines 46-48 ("They examined . . . material")

D) Lines 55-60 ("The team . . . 13th century")

**45**

The author uses the phrase "is written in" (line 6) most likely to

A) demonstrate the concept of the hands-on nature of the work done by scientists.

B) highlight the fact that scientists often write about their discoveries.

C) underscore the sense of importance that scientists have regarding their work.

D) reinforce the idea that the evidence is there and can be interpreted by scientists.

**46**

Where does the author indicate the medieval volcanic eruption most probably was located?

A) Near the equator, in Indonesia

B) In the Arctic region

C) In the Antarctic region

D) Near the equator, in Ecuador

**47**

Which choice provides the best evidence for the answer to the previous question?

A) Lines 1-3 ("About 750 . . . Ice Age")

B) Lines 26-28 ("Such a . . . the cooling")

C) Lines 49-54 ("The volume . . . the Holocene")

D) Lines 61-64 ("It's not . . . climate impacts")

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CONTINUE

48

As used in line 68, the phrase "Another possible candidate" implies that

A) powerful volcanic eruptions occur frequently.

B) the effects of volcanic eruptions can last for centuries.

C) scientists know of other volcanoes that erupted during the Middle Ages.

D) other volcanoes have calderas that are very large.

49

Which choice best supports the claim that Quilotoa was not responsible for the Little Ice Age?

A) Lines 3-4 ("Identifying . . . tricky")

B) Lines 26-28 ("Such a . . . cooling")

C) Lines 43-46 ("The researchers . . . atop the volcano")

D) Lines 71-75 ("But . . . closer match")

50

According to the data in the figure, the greatest below-average temperature variation occurred around what year?

A) 1200 CE

B) 1375 CE

C) 1675 CE

D) 1750 CE

51

The passage and the figure are in agreement that the onset of the Little Ice Age began

A) around 1150 CE.

B) just before 1300 CE.

C) just before 1500 CE.

D) around 1650 CE.

52

What statement is best supported by the data presented in the figure?

A) The greatest cooling during the Little Ice Age occurred hundreds of years after the temperature peaks of the Medieval Warm Period.

B) The sharp decline in temperature supports the hypothesis of an equatorial volcanic eruption in the Middle Ages.

C) Pyroclastic flows from volcanic eruptions continued for hundreds of years after the eruptions had ended.

D) Radiocarbon analysis is the best tool scientists have to determine the temperature variations after volcanic eruptions.

# STOP

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

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# Writing and Language Test

## 35 MINUTES, 44 QUESTIONS

**Turn to Section 2 of your answer sheet to answer the questions in this section.**

**DIRECTIONS**

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

Some questions will direct you to an underlined portion of a passage. Other questions will direct you to a location in a passage or ask you to think about the passage as a whole.

After reading each passage, choose the answer to each question that most effectively improves the quality of writing in the passage or that makes the passage conform to the conventions of standard written English. Many questions include a "NO CHANGE" option. Choose that option if you think the best choice is to leave the relevant portion of the passage as it is.

**Questions 1-11 are based on the following passage.**

### Ghost Mural

In 1932 the well-known Mexican muralist David Alfaro Siqueiros was commissioned to paint a mural on the second-story exterior wall of a historic building in downtown Los Angeles. Siqueiros was asked to celebrate tropical America in his work, 1 he accordingly titled it "América Tropical." He painted the mural's first two sections, featuring images of a tropical rainforest and a Maya pyramid, during the day. 2 Also, to avoid

1

A) NO CHANGE
B) which he accordingly titled
C) accordingly he titled it
D) it was titled accordingly

2

A) NO CHANGE
B) However,
C) Although,
D) Moreover,

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CONTINUE

scrutiny, Siqueiros painted the final section of the mural, the 3 centerpiece at night.

4 The reason for Siqueiros's secrecy became clear when the mural was 5 confided. The centerpiece of the work was dominated by images of native people being oppressed and 6 including an eagle symbolizing the United States. Siqueiros's political message did not please the wealthy citizens who had commissioned his work. They eventually ordered the mural to be literally whitewashed, or painted over with white paint.

However, by the 1970s, the white paint had begun to fade, and the bright colors of the mural were beginning to show through. At the same time, a social and civil rights movement for Mexican Americans was working to raise awareness of Mexican American cultural identity. Artists associated with 7 this began to rediscover and promote the work of the Mexican muralists, particularly Siqueiros. To them, "América Tropical" was an example of how art in public spaces could be used to celebrate Mexican American heritage while at the same time making a political statement. Inspired by Siqueiros and the other muralists, this new generation of artists strove to emulate the old mural masters.

3

A) NO CHANGE
B) centerpiece,
C) centerpiece;
D) centerpiece—

4

Which choice best connects the sentence with the previous paragraph?

A) NO CHANGE
B) All three sections of the mural were on display
C) The community turned out in large numbers
D) Siqueiros was informed of people's reactions

5

A) NO CHANGE
B) promulgated.
C) imparted.
D) unveiled.

6

A) NO CHANGE
B) included
C) includes
D) had included

7

A) NO CHANGE
B) it
C) them
D) this movement

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CONTINUE

8 The result was an explosion of mural painting that spread throughout California and the southwestern United States in the 1970s. It was the Chicano mural movement. Hundreds of large, colorful new murals depicting elements of Mexican American life and history appeared during this period, some in designated cultural locations but many more in abandoned lots, on unused buildings, or 9 painted on infrastructure such as highways and bridges. Many of these murals can still be seen today, although some have not been well maintained.

8

Which choice most effectively combines the underlined sentences?

A) The result was an explosion, the Chicano mural movement, of mural painting that spread throughout California and the southwestern United States in the 1970s.

B) The result was the Chicano mural movement, an explosion of mural painting that spread throughout California and the southwestern United States in the 1970s.

C) The explosion of mural painting that spread throughout California and the southwestern United States in the 1970s was the resulting Chicano mural movement.

D) An explosion of mural painting resulted and it spread throughout California and the southwestern United States in the 1970s; it was the Chicano mural movement.

9

A) NO CHANGE

B) they were painted on

C) on

D) DELETE the underlined portion.

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CONTINUE

Fortunately, a new group of artists has discovered the murals, and efforts are underway to clean, restore, and repaint them. Once again, Siqueiros's "América Tropical" is 10 leading the way. After a lengthy and complex restoration process, this powerful work is now a tourist attraction, complete with a visitor center and a rooftop viewing platform. 11 Advocates hope that Siqueiros's mural will once more serve as an inspiration, this time inspiring viewers to save and restore an important cultural and artistic legacy.

10

Which choice most effectively sets up the information that follows?

A) NO CHANGE
B) being cleaned and restored.
C) at risk of destruction.
D) awaiting its moment of appreciation.

11

At this point, the writer is considering adding the following sentence.

> When it was painted in 1932, Siqueiros's mural was considered offensive, but now it is acclaimed.

Should the writer make this addition here?

A) Yes, because it provides historical context for the changes discussed in the passage.
B) Yes, because it provides a useful reminder of how people once viewed Siqueiros's work.
C) No, because it unnecessarily repeats information from earlier in the passage.
D) No, because it makes a claim about Siqueiros's work that is not supported by the passage.

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CONTINUE

# Pre-Calculus (12) Week 21

Name: Gary Young

#1 Points possible: 1. Total attempts: 1

Evaluate the expression $(7 - 2i) + (6 + 4i)$ and write the result in the form $a + bi$.

_____

#2 Points possible: 1. Total attempts: 1

Evaluate the expression $(-1 - 4i) - (3 - 2i)$ and write the result in the form $a + bi$.

_____

#3 Points possible: 1. Total attempts: 1

Evaluate the expression $(4 + 2i)(-3 + i)$ and write the result in the form $a + bi$.

_____

#4 Points possible: 1. Total attempts: 1

Rewrite the complex number $10e^{2i}$ in $a + bi$ form

_____

#5 Points possible: 1. Total attempts: 1

Write the following numbers in the polar form $re^{i\theta}$, $0 \leq \theta < 2\pi$:

(a) $\frac{1}{7}$

$r =$ _____ , $\theta =$ _____ ,

(b) $3 + 3i$

$r =$ _____ , $\theta =$ _____ ,

(c) $-3 - 3i$

$r =$ _____ , $\theta =$ _____ .