

# Day 4

## Non-Traditional Instructional Day Packet

Our county will have the option to call an NTI (Non-Traditional Instructional). In the event that this day is called, you will be required to complete assignments at home. During these days, teacher will be available via email, live grades, or other forms of technology. If you have lost your NTID packet, there are electronic copies on the school's webpage at <http://pphs.maso.k12.wv.us>

### Assignments / Directions:

This packet contains material for 5 days. The front of each packet is labeled with a day. They are to be completed in the correct order – If only one NTI day is called, then the student will only do assignments marked with “Day 1.” The next time an NTI day is called, they would then do “Day 2” and so on.

### **IMPORTANT**

Each page that you do as an NTID needs to be completed and returned to the appropriate teacher the first day you are back at school. English is returned to your English teacher, math is returned to your math teacher, science is returned to your science teacher and the government page to your social studies teacher.

Questions 12-22 are based on the following passage and supplementary material.

### Dark Snow

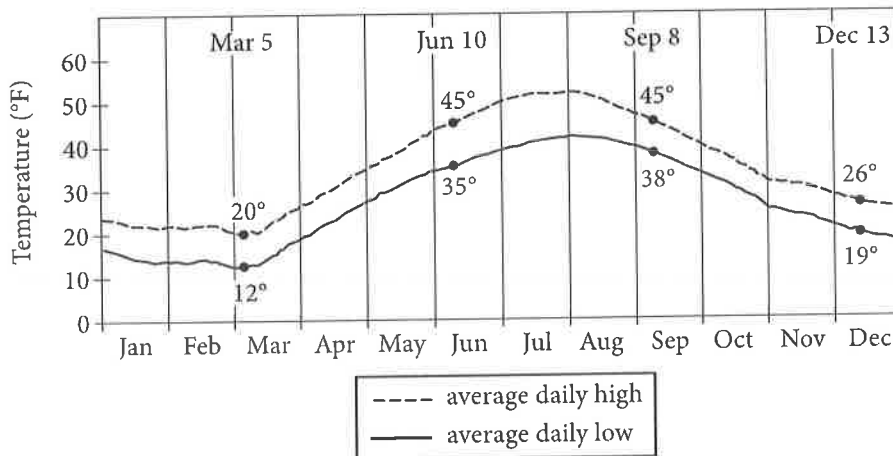
Most of Greenland's interior is covered by a thick layer of ice and compressed snow known as the Greenland Ice Sheet. The size of the ice sheet fluctuates seasonally: in summer, average daily high temperatures in Greenland can rise to slightly above 50 degrees Fahrenheit, partially melting the ice; in the winter, the sheet thickens as additional snow falls, and average daily low temperatures can drop **12** to as low as 20 degrees.

12

Which choice most accurately and effectively represents the information in the graph?

- A) NO CHANGE
- B) to 12 degrees Fahrenheit.
- C) to their lowest point on December 13.
- D) to 10 degrees Fahrenheit and stay there for months.

Average Daily High and Low Temperatures Recorded at Nuuk Weather Station, Greenland (1961–1990)



Adapted from WMO. ©2014 by World Meteorological Organization.

Typically, the ice sheet begins to show evidence of thawing in late **13** summer. This follows several weeks of higher temperatures. **14** For example, in the summer of 2012, virtually the entire Greenland Ice Sheet underwent thawing at or near its surface by mid-July, the earliest date on record. Most scientists looking for the causes of the Great Melt of 2012 have focused exclusively on rising temperatures. The summer of 2012 was the warmest in 170 years, records show. But Jason **15** Box, an associate professor of geology at Ohio State believes that another factor added to the early **16** thaw; the “dark snow” problem.

13

Which choice most effectively combines the two sentences at the underlined portion?

- A) summer, following
- B) summer, and this thawing follows
- C) summer, and such thawing follows
- D) summer and this evidence follows

14

- A) NO CHANGE
- B) However,
- C) As such,
- D) Moreover,

15

- A) NO CHANGE
- B) Box an associate professor of geology at Ohio State,
- C) Box, an associate professor of geology at Ohio State,
- D) Box, an associate professor of geology, at Ohio State

16

- A) NO CHANGE
- B) thaw; and it was
- C) thaw:
- D) thaw: being

According to Box, a leading Greenland expert, tundra fires in 2012 from as far away as North America produced great amounts of soot, some **17** of it drifted over Greenland in giant plumes of smoke and then **18** fell as particles onto the ice sheet. Scientists have long known that soot particles facilitate melting by darkening snow and ice, limiting **19** it's ability to reflect the Sun's rays. As Box explains, "Soot is an extremely powerful light absorber. It settles over the ice and captures the Sun's heat." The result is a self-reinforcing cycle. As the ice melts, the land and water under the ice become exposed, and since land and water are darker than snow, the surface absorbs even more heat, which **20** is related to the rising temperatures.

17

- A) NO CHANGE
- B) soot
- C) of which
- D) DELETE the underlined portion.

18

- A) NO CHANGE
- B) falls
- C) will fall
- D) had fallen

19

- A) NO CHANGE
- B) its
- C) there
- D) their

20

Which choice best completes the description of a self-reinforcing cycle?

- A) NO CHANGE
- B) raises the surface temperature.
- C) begins to cool at a certain point.
- D) leads to additional melting.

[1] Box's research is important because the fires of 2012 may not be a one-time phenomenon. [2] According to scientists, rising Arctic temperatures are making northern latitudes greener and thus more fire prone.

[3] The pattern Box observed in 2012 may repeat

**21** itself again, with harmful effects on the Arctic ecosystem. [4] Box is currently organizing an expedition to gather this crucial information. [5] The next step for Box and his team is to travel to Greenland to perform direct sampling of the ice in order to determine just how much the soot is contributing to the melting of the ice sheet. [6] Members of the public will be able to track his team's progress—and even help fund the expedition—through a website Box has created. **22**

**21**

- A) NO CHANGE
- B) itself,
- C) itself, with damage and
- D) itself possibly,

**22**

To make this paragraph most logical, sentence 4 should be placed

- A) where it is now.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 5.



## Math Test – No Calculator

25 MINUTES, 20 QUESTIONS

Turn to Section 3 of your answer sheet to answer the questions in this section.

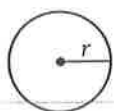
### DIRECTIONS

For questions 1-15, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 16-20, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 16 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

### NOTES

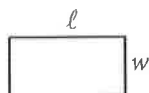
- The use of a calculator is **not permitted**.
- All variables and expressions used represent real numbers unless otherwise indicated.
- Figures provided in this test are drawn to scale unless otherwise indicated.
- All figures lie in a plane unless otherwise indicated.
- Unless otherwise indicated, the domain of a given function  $f$  is the set of all real numbers  $x$  for which  $f(x)$  is a real number.

### REFERENCE

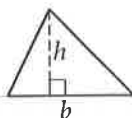


$$A = \pi r^2$$

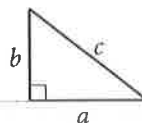
$$C = 2\pi r$$



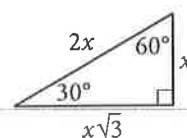
$$A = \ell w$$



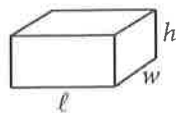
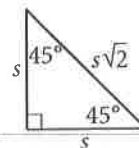
$$A = \frac{1}{2}bh$$



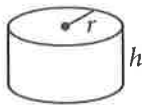
$$c^2 = a^2 + b^2$$



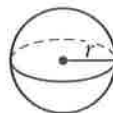
Special Right Triangles



$$V = \ell wh$$



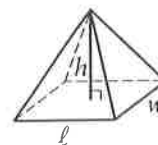
$$V = \pi r^2 h$$



$$V = \frac{4}{3}\pi r^3$$



$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}\ell wh$$

The number of degrees of arc in a circle is 360.

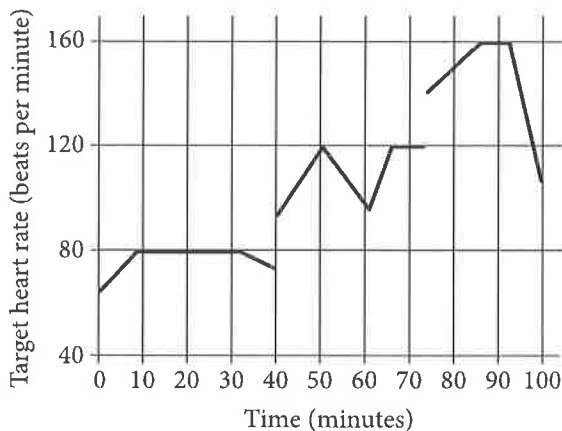
The number of radians of arc in a circle is  $2\pi$ .

The sum of the measures in degrees of the angles of a triangle is 180.



1

John runs at different speeds as part of his training program. The graph shows his target heart rate at different times during his workout. On which interval is the target heart rate strictly increasing then strictly decreasing?



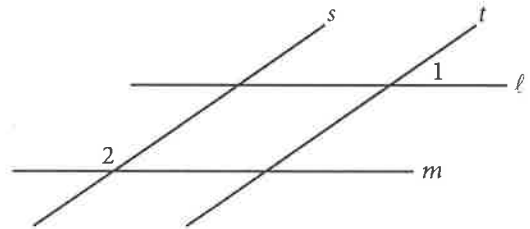
- A) Between 0 and 30 minutes
- B) Between 40 and 60 minutes
- C) Between 50 and 65 minutes
- D) Between 70 and 90 minutes

2

If  $y = kx$ , where  $k$  is a constant, and  $y = 24$  when  $x = 6$ , what is the value of  $y$  when  $x = 5$ ?

- A) 6
- B) 15
- C) 20
- D) 23

3



In the figure above, lines  $l$  and  $m$  are parallel and lines  $s$  and  $t$  are parallel. If the measure of  $\angle 1$  is  $35^\circ$ , what is the measure of  $\angle 2$ ?

- A)  $35^\circ$
- B)  $55^\circ$
- C)  $70^\circ$
- D)  $145^\circ$

4

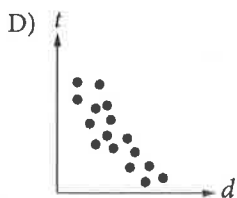
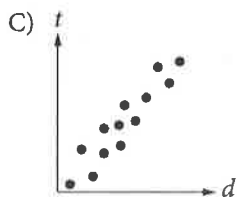
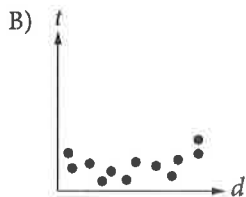
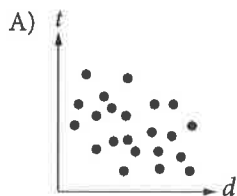
If  $16 + 4x$  is 10 more than 14, what is the value of  $8x$ ?

- A) 2
- B) 6
- C) 16
- D) 80



5

Which of the following graphs best shows a strong negative association between  $d$  and  $t$ ?



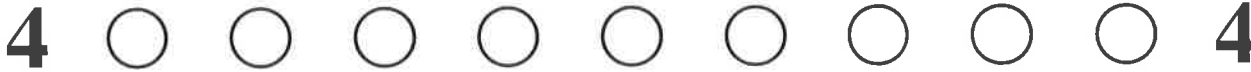
6

$1 \text{ decagram} = 10 \text{ grams}$ $1,000 \text{ milligrams} = 1 \text{ gram}$
---

A hospital stores one type of medicine in 2-decagram containers. Based on the information given in the box above, how many 1-milligram doses are there in one 2-decagram container?

- A) 0.002
- B) 200
- C) 2,000
- D) 20,000





**PASSAGE IV**

*Salt pans* are unusual geologic formations found in deserts. They are formed in *endorheic basins*, which are lowland areas where water collects but has no outflow. Any rain that falls or any water that is collected in an *endorheic basin* remains there permanently, except for what is lost through evaporation. This type of closed system often leads to a high concentration of salt and other minerals.

*Study 1*

Four different salt pans around the world were studied. The volumes of mineral deposits were estimated from the surface areas of the salt pans and the average thickness of the deposits. The ages of the salt pans were also estimated based on the mineral volume. The estimates are shown in Table 1.

Salt pan	Estimated mineral volume (km <sup>3</sup> )	Estimated age (million years)
A	2,000,000	4.5
B	4,500,000	5.7
C	5,700,000	10.8
D	12,150,000	21.0

*Study 2*

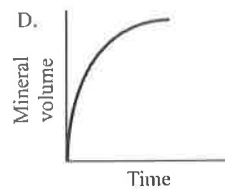
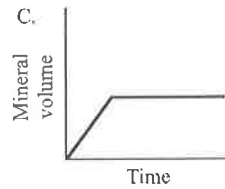
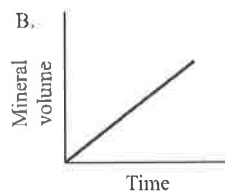
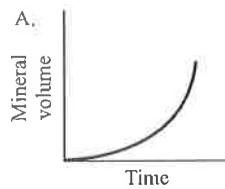
The same four salt pans were excavated for fossils. Fossil remnants of extinct plant species were found within each of the salt pans. The ages of the fossils found were similar to the ages of the salt pans (See Table 2). Scientists hypothesize that flooding of each salt pan may have led to the extinction of the plant species.

Salt pan	Type of fossils found	Estimated age of fossils (million years)
A	Plant species <i>q</i>	4.4
B	Plant species <i>r</i>	5.5
C	Plant species <i>s</i>	10.2
D	Plant species <i>t</i>	19.9

18. Which of the following statements is best supported by information in the passage?

- F. Water that has collected in *endorheic basins* is at least 21.0 million years old.
- G. The age of fossilized plant species cannot be precisely estimated.
- H. More water has collected in and evaporated from older salt pans.
- J. Any *endorheic basin* that is less than 2.0 million years old contains no fossils.

19. Which one of the following graphs best represents the relationship between the mineral volume and the age of the salt pans, according to Study 1?



4



4

20. Is the conclusion that Salt pan A contains more extinct plant fossils than does Salt pan D supported by information in the passage?
- F. Yes, because Salt pan A is younger than Salt pan D.
  - G. Yes, because the passage suggests that it is easier for plants to grow in areas with a lower mineral volume.
  - H. No, because Salt pan D contains a different type of fossilized plant.
  - J. No, because the passage does not include data regarding the quantity of plant fossils found in the salt pans.
21. From the results of Table 1, you could conclude that a salt pan formed more than 21 million years ago would have a mineral value:
- A. between 5,700,000 km<sup>3</sup> and 12,150,000 km<sup>3</sup>.
  - B. equal to approximately  $\frac{1}{2}$  the mineral volume of Salt pan B.
  - C. greater than 12,150,000 km<sup>3</sup>.
  - D. less than 2,000,000 km<sup>3</sup>.
22. A fossilized plant approximately 9.7 million years old was recently discovered in a salt pan in North America. It was most likely found in a salt pan similar to:
- F. Salt pan A.
  - G. Salt pan B.
  - H. Salt pan C.
  - J. Salt pan D.

GO ON TO THE NEXT PAGE.

## Review for Citizenship Test

1. If both the President and Vice President can no longer serve, who becomes President?
2. Who is the Commander in Chief of the military?
3. Who signs bills to become laws?
4. Who vetoes bills?
5. What does the President's Cabinet do?
6. What are the Cabinet-level positions?
7. What does the judicial branch do?
8. What is the highest court in the United States?
9. How many justices are on the Supreme Court?
10. Who is the Chief Justice of the United States now?