

Name:

Number:

Score: _____ / 50

Science English

Semester Final 2021

You can do it!

YOU

THE TEST

D A

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Math Section [30pts]

Question 0 Check that your name and number are on top of each page. Thanks!

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Question 1 Write these equations using numbers and symbols. DO NOT SOLVE THEM

[3 points] *Example: three plus twenty-three minus thirteen Answer: $3+23-13$*

A. six hundred eighty-two divided by thirteen _____

B. three-fourths subtract forty-four to the power of three _____

C. the square root of eighteen times negative sixty _____

Question 2 Write the numbers using English or write the number from the English words.

[2 points]

Example: 252

Answer: two hundred and fifty two.

Example: forty three

Answer: 43

759,901

54,000,684

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Six hundred seventy one million, nine hundred thirty six thousand, two hundred forty five

Eleven million six thousand twenty

Question 3 Write the numbers in scientific notation or normal form [2 points]

<u>Scientific Notation</u>	<u>Normal Form</u>
<i>Example</i> 4.203×10^3	<i>Answer</i> 4,203
4.484×10^7	
	450,000

1.299×10^3	
	10,000,000,000

Question 4 Draw a line from the word to its correct definition. [2 points]

- | | |
|--------|---|
| mean | occurs the most often |
| median | middle value |
| mode | difference between the largest and smallest value in the data set |
| range | most common measure of an average |

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Question 5 Over a period of 9 days, William eats nothing but shabu shabu. Below is a table for how many kilograms of shabu shabu he ate each day. [5 points]

day	1	2	3	4	5	6	7	8	9
kg of shabu shabu	7	16	25	3	16	4	8	4	16

- a. Find the mean, median, mode, and range of the data. Use the space below to do your work. DON'T FORGET THE UNITS **V**

Mean _____ Median _____ Mode _____ Range _____

b. Circle the correct answer. Is William eating too much shabu shabu? [1 point]

- A. No B. No C. No D. No
E. No F. No G. No H. No

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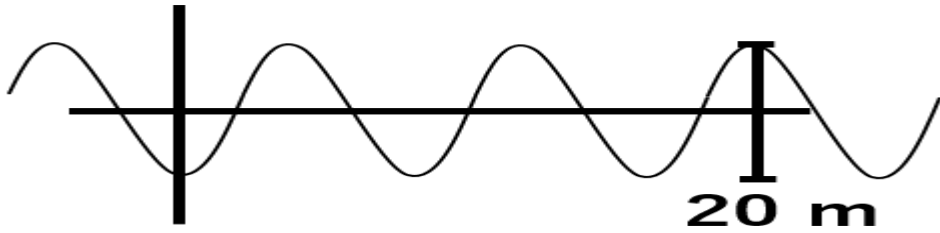
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Question 6 Light has a frequency of $900,000 \frac{1}{\text{sec}}$. What is its wavelength? [2 points]

$$\left(c = 300,000 \frac{\text{km}}{\text{sec}} \right)$$

Question 7

a. The distance from the top to the bottom of a wave is 20 meters. What is the wave's amplitude? [1 point]



Amplitude: _____

b. The wavelength of this wave (from part a.) is five times the amplitude. It has a frequency of $1.1 \times 10^4 \frac{1}{\text{sec}}$. How fast is the wave going? [2 points]

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Astronomy section (20 pts)

Question 1 Put the following in order from smallest to largest. [2 points]

- A. α Centauri (star system)
- B. Virgo Supercluster
- C. Whirlpool Galaxy
- D. 72 angry cats
- E. Sirius (star)

Smallest _____ Largest

Question 2

a. List 3 examples of places that are BAD for telescopes. [1.5 points]

1. _____

2. _____

3. _____

b. List 2 examples of places on Earth that are GOOD for telescopes. [1 point]

1. _____

2. _____

c. Where is the best place to put a telescope? _____ [1 point]

d. Is Hokkaido a good place to build a telescope? Why or why not? [2 points]

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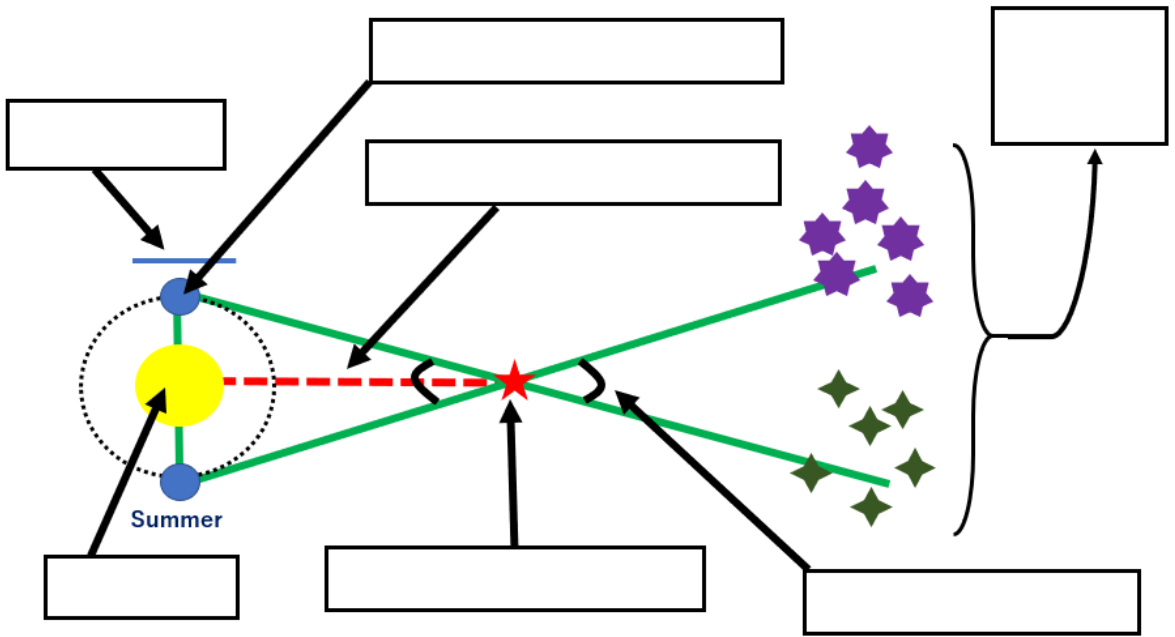
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Question 3

a. Put the 7 words or phrases in their correct boxes in the picture below. [3.5 points]

- Words: 1. TARGET STAR 2. DIFFERENT BACKGROUNDS
3. EARTH 4. WINTER
5. SUN 6. ANGLE OF CHANGE
7. DISTANCE WE WANT TO CALCULATE



b. In two to three sentences, please explain the idea of parallax. [2 points]

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Question 4

a. Circle the answer below. [0.5 points]

How long ago was the beginning of the universe?

- A. last Tuesday
- B. about 100 years ago
- C. about 300 million years ago
- D. about 1 billion years ago
- E. about 10 billion year ago
- F. 1 googol years ago

b. Circle the correct answer. [0.5 points]

At the beginning of the universe, the universe was

tiny, hot, and dense.

large, hot, and light.

cold, dense, and tiny.

c. What name did scientists give the beginning of the universe? [1 point]

Question 5

a. Circle the correct answer. [0.5 points]

Parallax and brightness are both methods used to measure the _____ other stars.

color of

speed of

distance to

b. When is the brightness method a good method to use? [1 points]

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c. Below are some stars. Different types of stars have different numbers of points. Circle all the stars below that scientists can use the brightness method on. [1 point]



Question 6

This is a question about the experiment where we dropped the egg. If you could build a new lander for your egg, what would you change to make the lander stronger? Were there any other materials that you wanted to use to build your lander? [2 points]

Question 7 Circle the correct answers [1.5 points]

a. There are two big theories about the end of the Universe. One is called the Big Crunch. The name of the other, more popular theory is called _____

Dying Temperature *Heat Death* *The Big Bang* *The Sad Cookie*

b. Both of these theories come from the fact that the Universe is _____

staying the same size *getting smaller* *getting bigger*

c. If the second theory is correct, the Universe will end _____.

on Monday *about 10^{100} years from now*

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Question 8 Use the words to fill in the spaces in the paragraph below. [10 points]

● evil	● a comet	● opinion	● space	● nebulae
● very nice	● an asteroid	● Earth	● light	● empty
● matter	● ice	● galaxy	● dust	● atoms
● Andromeda	● fact	● telescopes	● temperature	● planet
● Universe	● peer review	● Milky Way	● solar	● nuclear

Let me tell you a secret: all cats are aliens. Don't laugh. This is not an opinion. It's a _____! Cats come from another rocky _____ called Catland that is orbiting a star in a different part of our home galaxy, the _____, and not the _____ Galaxy, our neighbor, which is too far away. Cats discovered our _____ when cat-scientists used _____ to look at the _____ coming from our sun. At first, they thought Earth was _____, a large ball of _____ and dust. Then they thought it was a small, rocky body orbiting the sun called _____. But after a lot of _____ from many experts, the cat-scientists corrected their mistakes and learned that _____ was a planet. "Let's go there," they said, "and steal everything because humans are not strong like us!" The cats laughed.

The _____ is defined as all existing _____ and _____. While most of it is _____ and cold, there is still a lot of energy due to _____ happening inside every star, where their _____ are being pushed together tightly. The cats want to have all the energy for themselves because cats are terrible and _____. So the cats came to Earth to steal everything. After they are done, they will steal the moon and the sun next. Then, they will steal the rest of our _____. Cats are mean, mean aliens. Please watch out!

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Question 9 What was your favorite and least favorite part about this class. Please answer in complete sentences. [1 bonus point]

Fjioqai bgvUjajs

THIS IS THE END OF THE **Final**

Cat Box: If you finish the test early, you can draw alien cats taking over the world and stealing the moon [0 points]