

Name _____

Date _____

**Earth Science Review Sheet - Exam III
The Solar System**

**THIS REVIEW SHEET IS DUE ON WEDNESDAY, OCTOBER 21st
EXAM DATE - FRIDAY, OCTOBER 23rd**

Section I - Observing the Solar System (Pages 701-704)

1) Who were the first astronomical observers the text mentions?

2) The Greeks observed the motions of which 5 planets? _____

Why was Earth not included? _____

Why were Uranus and Neptune not included? _____

3) A geocentric view of the universe places _____ at the center.

4) Ptolemy realized that the planets move in _____

5) A universe where the Sun is at the center is called a _____ universe.

6) Copernicus's view of the universe was _____. We now know that this is incorrect; however, Copernicus was correct in that he discovered that _____

7) Who was Galileo and what did he prove? What instrument did he use to prove this? _____

8) What did Kepler realize? _____

9) What does the solar system include? _____

10) List all of the planets in order from the Sun outward: _____

Section II - The Sun (Pages 706-710 and class notes)

1) The Sun accounts for _____% of the solar system's total mass.

2) The sun is about 1/4th _____ and 3/4th _____ (elements).

3) What are the three layers of the Sun's interior? _____

4) What is nuclear fusion in the case of the sun? _____

Temperatures must be _____°C for nuclear fusion to occur.

What is this in °F? _____

5) What are the three layers of the Sun's atmosphere? _____

6) _____ are cooler areas on the Sun's surface.

7) A _____ is a loop or arch of gas emitted by the Sun.

8) What is a solar flare and how can solar wind be generated by solar flares

affect Earth? _____

Section III - The Inner Planets (Pages 712-717 and class notes)

1) List the inner planets: _____

2) What is similar about the inner planets (2 things)? _____

3) What are Earth's three (3) main layers? _____

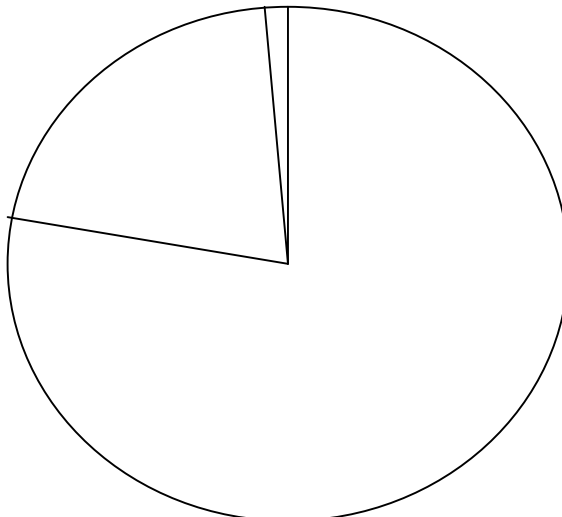
4) Earth is unique in the solar system in that it is the only planet with _____ at its surface. What is the percentage

or water compared to land? _____ % Water _____ % Land

5) How is it that Earth (and the other planets with atmospheres) are able

to hold onto their atmospheres? _____

6) Below is a pie graph. Please list the gases and their percentages that compose Earth's atmosphere:



7) _____ is the smallest planet in the solar system and is also the closest planet to _____.

8) What spacecraft explored Mercury in 1974 and 1975? _____

9) Why are there such temperature extremes on Mercury? _____

10) Venus was once called Earth's twin. Why? _____

11) Venus's atmosphere is approximately 97% _____

12) What are pressures like on Venus? _____

13) Even though Venus is not the closest planet to the sun it takes the cake as being the hottest planet in the solar system. Why? _____

14) What is the greenhouse effect? _____

15) It is said that Venus has a "runaway" greenhouse effect. What does this mean? _____

16) The spacecraft _____ mapped the surface of Venus using radar mapping as the surface is obscured by a thick blanket of clouds composed of _____ from the outgassing of volcanoes.

17) _____ is referred to as the "Red Planet." Why?

18) Mars has a thin atmosphere that is _____ % _____.

19) Compared to Earth Mars is _____ the size.

20) What are two pieces of evidence that liquid water once flowed on Mars?

21) _____ is on Mars and is the largest volcano in the solar system at approximately 75,000 feet.

For questions 22 - 25, refer to figure 16 on page 713. **SHOW YOUR WORK ON EACH OF THESE PLEASE!!**

22) Mercury's period of rotation is 59 Earth days. How many hours is that?
HINT: There are 24 hours on 1 Earth day.

23) Venus has a period of revolution of .62 Earth years. How many days is this? HINT: There are 365 days in one Earth year.

24) Earth's average distance from the Sun is 150,000,000 kilometers. What is this in miles? HINT: 1.62 miles are in 1 kilometer

25) Driving from Houston to Galveston covers approximately 60 miles. What is this in kilometers? HINT: 1 mile is approximately 1.62 kilometers.

Section IV - The Outer Planets (Pages 721-727 and class notes

1) List the outer planets in order moving outward: _____

2) _____ is the largest and most massive planet in the solar system.

3) _____ and _____ compose Jupiter's atmosphere.

4) What is Jupiter's Great Red Spot? How long has this been occurring?

5) What happens to the H and He as you descend into Jupiter's atmosphere?

6) What happens to temperature and pressure as you descend into Jupiter's atmosphere? _____

7) What are the names of Jupiter's Moons? _____

8) _____ is the second largest planet in the solar system and what is it known for? _____

9) What are Saturn's rings composed of? _____

10) Titan is _____

11) Why does Uranus have its blue-green tinge? _____

12) Which spacecraft flew by Uranus and photographed it? _____

13) What is interesting about Uranus? _____

14) How was Neptune discovered? _____

15) Why Neptune blue? _____

16) Describe the surface of Pluto? _____

17) Why is Pluto not considered a planet anymore? _____

Section V - Comets, Asteroids, and Meteors (Pages 730-733)

1) A _____ is a loose collection of ice, dust, and small rocky particles whose orbits are usually very long, narrow ellipses.

2) Where do comets originate from? _____

3) What are asteroids and where are most asteroids found? _____

4) What is the difference between a meteoroid, meteor, and meteorite?

Meteoroid - _____

Meteor - _____

Meteorite - _____

Section VI - Is There Life Beyond Earth (Pages 734-

1) Life other than that on Earth is called _____.

2) What are "Goldilocks" conditions? _____

3) Do all organisms need "Goldilocks" conditions to survive? Please give at least two examples to support your claim. _____

4) Why does Jupiter's moon Europa have the attention of astrobiologists?

Section VII - Chemical Symbols and The Greenhouses Effect (Class Notes)

Elements

H - Hydrogen

He - Helium

O - Oxygen

Fe - Iron

N - Nitrogen

Ar - Argon

Ne - Neon

C - Carbon

S - Sulfur

Compounds

CH₄ - Methane

NH₃ - Ammonia

CO₂ - Carbon Dioxide

H₂SO₄ - Sulfuric Acid

H₂O (l) - Liquid (Water)

H₂O (g) - Gas (Water Vapor)

H₂O (s) - Solid (Ice)

} **Water**

Greenhouse Gases

H₂O (g) - Main Greenhouse Gas

CO₂ - Main human produced ghg

CH₄ - Methane

O₃ - Ozone