

#40: The Solar System

name: _____

Use the textbook (Glencoe Earth Science) for this assignment.

1. Read the introductory paragraph for the Discovery Lab on page 747. You will need a calculator. If we shrank the moon so that its diameter were only 1 cm. (a nickel is 2 cm across), How many centimeters (cm) across would Earth be?

_____cm

2. How far apart would the Earth and Moon be? _____cm

3. How many cm across would the Sun be, and how far apart would the Earth and Sun be?

_____cm across

_____cm apart

4. Read 757 and look at the diagram. Explain the most commonly accepted theory of how the Moon was formed?

5. Earth's axis of rotation is tilted 23.5 degrees. What would be the big difference if it were not tilted?

6. How long does it take the Moon to orbit (go around) the Earth once? (p. 764)

7. Look at the diagram atop page 760. Which season corresponds to each number?

1.

2.

3.

4.

8. Look at diagram **A** on the bottom of page 760. As the Earth spins once (24 hours), would Helena spend more time in daylight, or more time in darkness?

9. In diagram **A**, what season would this be in the Northern Hemisphere? What season would it be in the south?

North:

South:

10. Explain what causes a solar eclipse? (p. 765)

11. What causes a lunar eclipse? (p. 767)

12. Mercury spins once every _____ hours (Earth spins once every 24 hours). Mercury gets extremely hot during its day and extremely cold during its night. Why does Mercury get so cold at night despite being so close to the Sun?

13. One day on Venus is equal to _____ Earth days because Venus spins so slowly.
14. The average temperature on Venus is hot enough to melt lead. Why is it so hot?
15. NASA would like to send people back to the Moon and then send a manned mission to Mars several years after that. What is the atmosphere like on Mars?
16. What are four features that have been discovered (with robotic probes) on the surface of Mars that suggest that liquid water once existed there?
17. The interiors of the gas giants (Jupiter, Saturn, Uranus, Neptune) are composed of _____
_____.
18. Pluto is no longer classified as a planet. List three ways that Pluto is different from the gas giants.
19. What is Charon, and why did some astronomers consider it and Pluto to be a “double planet”?
20. What are asteroids, and where in the solar system are most of them located?
21. What are the two source regions (clusters) for comets?

NOTE: Pluto is now classified as a “dwarf planet”. It is one of many icy/rocky objects that orbit the Sun in the area known as the Kuiper Belt.