

name _____

1. Questions 1-21 are worth .5 points each. *What discovery did Aristotle make, and how did he figure this out (long before 1492)?

3. *How did he know that he needed to multiply the distance between Alexandra and Syene by 50?

4. *What is the most important feature of the Ptolemaic System (developed by Greek astronomer, Ptolemy around 141 A.D.) See figure 21.5.

5. *What major change did Copernicus make to the Ptolemaic System about 1300 years later?

6. *Why wasn't he punished by the Catholic Church (The Inquisition) for his claims?

7. Carefully read the section about Kepler. What is an astronomical unit and how many miles is it?

8. What is the “period” of revolution for the Earth in days?

... for Mercury in Earth days?

... for Pluto in Earth years? (Google it!)

10. Use Kepler's Third Law to determine how long it would take a planet to orbit the Sun if that planet were 15 times farther from the Sun than Earth is. Show your work.

11. If a planet orbits the Sun in 20 years, how far away from the Sun is it? Show your work.

12. Look at figure 21.11. Which of Kepler's Laws is illustrated here?

13. *Which of his laws is highlighted in figure 21.12, and why does Earth move faster on its orbit during January that it does during July?

14. *What did Galileo discover about Jupiter, and why was this significant?

15. *What did he discover about Venus, and what did this prove?

16. *What did he discover about the Sun, and why was this so controversial?

17. *Carefully read the last two paragraphs about Galileo on page 620. Explain what happened to him as a result of his claims.

18. Read about Isaac Newton on pages 620-622. What important force did he conceptualize at age 23?

19. Newton learned that the orbits of planets are a result of two actions. What are they?

20. What are the two factors that determine magnitude of the force of gravity?

21. *Tell what “perturbation” is, and explain why Earth’s orbit around the Sun is not a perfect circle.

22. (2 points) List the following astronomers in order by birth (first to last). Tell when they lived and where they were from (country): Newton, Copernicus, Brahe, Ptolemy, Kepler, Aristotle, Eratosthenes, and Galileo (put one name on each line below)
