Early Astronomy and Astronomers

Read pages 614-621 in our textbook and answer the following questions.

**Ancient Greeks:**

1. The study of the properties of objects in space and the laws under which the universe operates is called _____________.

2. What did the Ancient Greeks use geometry and trigonometry for?
   
   __________________________________________

3. What evidence did Aristotle use to conclude that the Earth was round?
   
   __________________________________________

4. What is Eratosthenes contributed with doing? ________________________
   
   __________________________________________

5. Hipparchus is probably the greatest of the early Greek astronomers and is known for:
   a. __________________________
   b. __________________________
   c. __________________________
   d. __________________________

6. What did Eratosthenes calculate Earth’s circumference to be? 
   __________________________ What is the modern circumference (what we know it to be)? __________________________

7. What motion could Ptolemy’s geocentric model not account for?
   
   __________________________

8. What geometric arrangement did he use to explain this motion?
   
   __________________________________________

9. What was Aristarchus the first Greek to believe in? __________________________

10. Ancient Greeks believed in the __________________________ view, which put ______________ at the center of the universe with everything else orbiting it.
11. In the ____________________ model, Earth and the other planets orbit the _________.

12. How long was Ptolemy’s model accepted for (how long did it go unchallenged for)? ____________________________________________________________

13. What is retrograde motion? ____________________________________________
____________________________________________________________________
____________________________________________________________________

The Birth of Modern Astronomy:

14. Who are the noted scientists of modern astronomy?
   a. ____________________________________________
   b. ____________________________________________
   c. ____________________________________________
   d. ____________________________________________
   e. ____________________________________________

15. What did Copernicus concluded and proposed? ______________________________
____________________________________________________________________
____________________________________________________________________

16. What contributions did Brahe make to astronomy? ___________________________
____________________________________________________________________
____________________________________________________________________

17. Who did Johannes Kepler serve as an assistant to? __________________________

18. What did Kepler discover about Mars orbit around the sun? _________________
____________________________________________________________________

19. In your own words, summarize Kepler’s three laws of planetary motion.
   a. _________________________________________________________________
   b. _________________________________________________________________
   c. _________________________________________________________________
20. The _______________ ___________ (_____) is the average distance between Earth and the sun. It is about ___________ million kilometers.

21. What were Galileo’s most important contributions? _________________________________ ________________________________________________

22. Galileo was the first astronomer to use what instrument? __________________________

23. What five important discoveries did Galileo make that helped to support Copernicus’s view of the universe?
   a. __________________________________________________________________________
   b. __________________________________________________________________________
   c. __________________________________________________________________________
   d. __________________________________________________________________________
   e. __________________________________________________________________________

24. What is inertia? _________________________________ __________________________________

25. What force was Newton the first to formulate and test? _______________________________