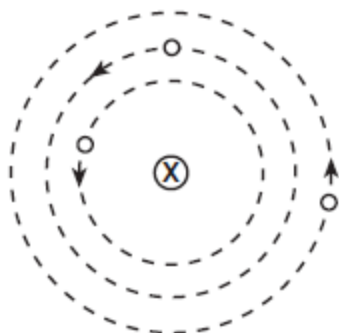


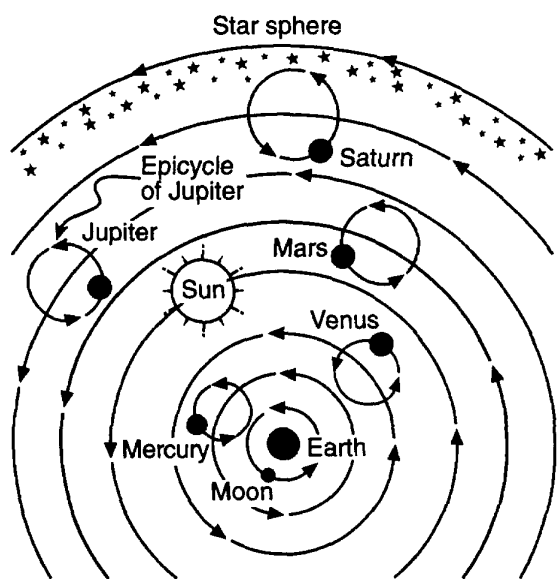
Modern Astronomy Quiz Review

1. The diagram below represents a simple geocentric model. Which object is represented by the letter X?



(Not drawn to scale)

- 1) Earth 3) Moon
 2) Sun 4) Polaris
2. The diagram below shows one model of a portion of the universe.



What type of model does the diagram best demonstrate?

- 1) a heliocentric model, in which celestial objects orbit Earth
 2) a heliocentric model, in which celestial objects orbit the Sun
3) a geocentric model, in which celestial objects orbit Earth
 4) a geocentric model, in which celestial objects orbit the Sun

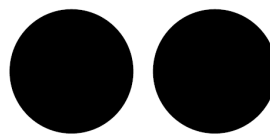
3. Which two characteristics classify Jupiter as a Jovian planet?

- 1) **low density and large diameter**
 2) low density and small diameter
 3) high density and large diameter
 4) high density and small diameter

4. Planets that are closest to the Sun are identified as

- 1) low-density Jovian
 2) low-density terrestrial
 3) high-density Jovian
4) high-density terrestrial

5. The diagram below compares the relative diameters of two planets in our solar system.

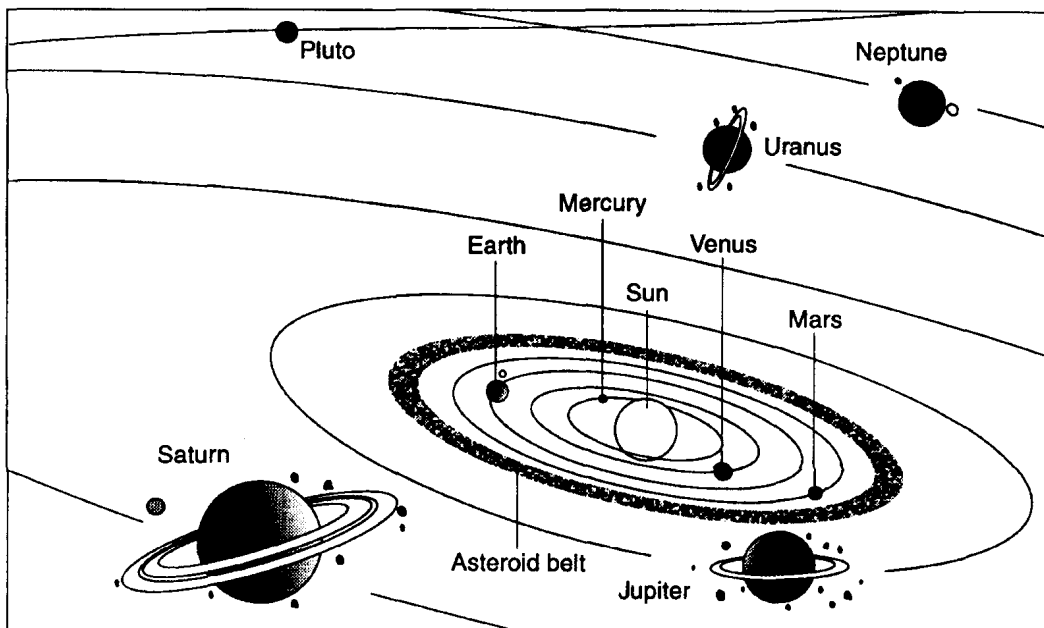


Which two planets have diameters that most closely resemble this comparison?

- 1) **Uranus and Neptune**
 2) Jupiter and Saturn
 3) Earth and Mars
 4) Mercury and Venus
6. Which planet takes longer to complete one rotation on its axis than it does to complete one orbit of the Sun?
- 1) Mercury 3) Earth
2) Venus 4) Mars
7. Compared to the other planets in our solar system, Jupiter, Saturn, and Neptune have
- 1) **shorter periods of rotation**
 2) shorter periods of revolution
 3) greater eccentricities
 4) greater densities
8. Which of the following has the lowest density?
- 1) **the planet Saturn** 3) the planet Earth
 2) the planet Jupiter 4) salt water

Modern Astronomy Quiz Review

9. Base your answer to the following question on the diagram of the solar system below.



(Not drawn to scale)

Which kind of model of the solar system is represented by the diagram?

- 1) **heliocentric model**
- 2) geocentric model
- 3) sidereal model
- 4) lunar model

10. Which table best lists the differences between a terrestrial planet and a Jovian planet in our solar system?

- 1)

Terrestrial Planet	Jovian Planet
mainly rocky in composition	mainly gaseous in composition
small in size	large in size
- 2)

Terrestrial Planet	Jovian Planet
mainly gaseous in composition	mainly rocky in composition
small in size	large in size
- 3)

Terrestrial Planet	Jovian Planet
mainly rocky in composition	mainly gaseous in composition
large in size	small in size
- 4)

Terrestrial Planet	Jovian Planet
mainly gaseous in composition	mainly rocky in composition
large in size	small in size

11. An astronomical unit (A.U.) is

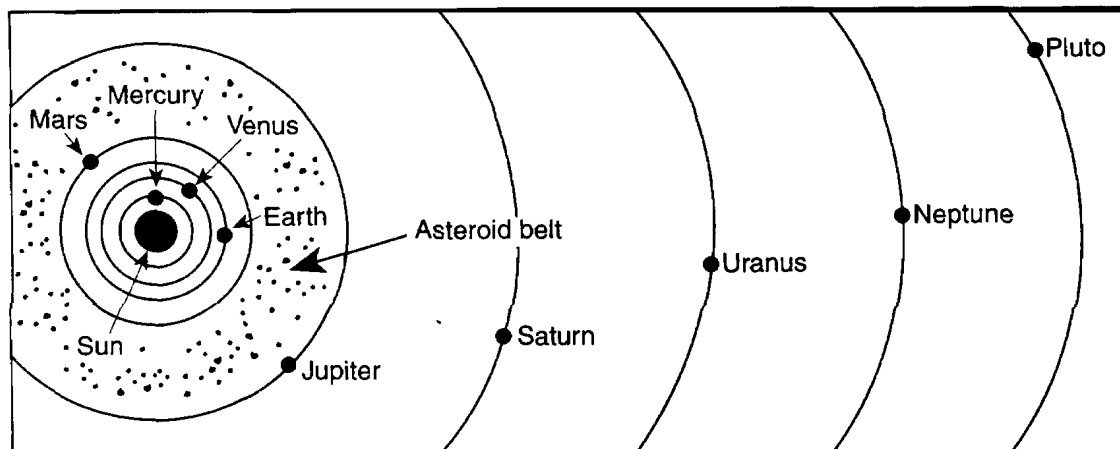
- 1) a term for defining the luminosity of a star
- 2) **the average distance from the Earth to the sun**
- 3) the average distance of any given planet to the sun
- 4) equal to a light year

12. Compared to the distances between the planets of our solar system, the distances between stars are usually

- 1) much less
- 2) **much greater**
- 3) about the same

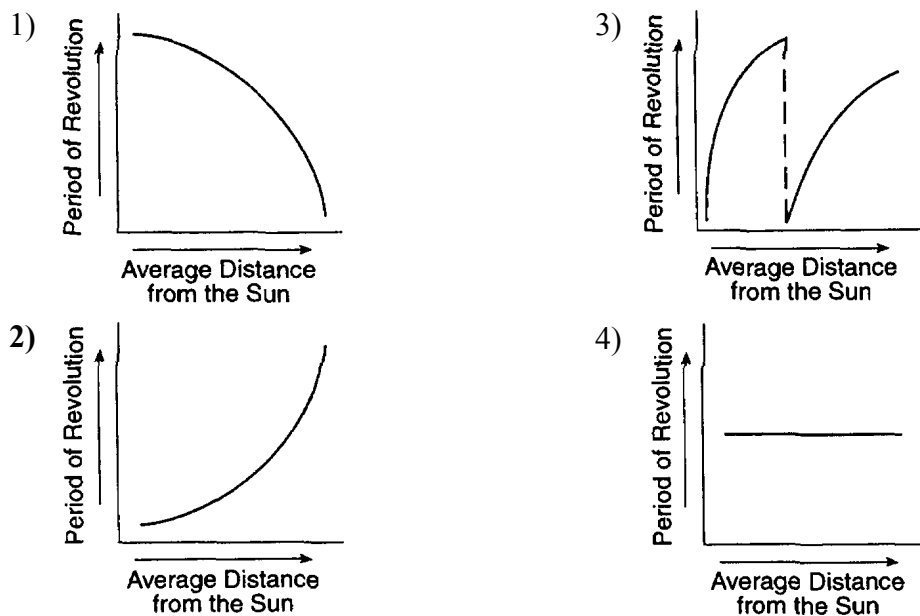
Modern Astronomy Quiz Review

13. Base your answer to the following question on the diagram below, which shows a portion of the solar system.



(Not drawn to scale)

Which graph best represents the relationship between a planet's average distance from the Sun and the time the planet takes to revolve around the Sun?



14. The average temperature of the planets

- 1) increases with greater distance from the Sun
- 2) **decreases with greater distance from the Sun**
- 3) has no relationship to the distance from the Sun
- 4) depends only on the chemical composition of the atmosphere of each planet

15. Which event occurred approximately 4.6 billion years ago?

- 1) evolution of the earliest fish
- 2) evolution of stromatolites
- 3) formation of the oldest known Earth rocks
- 4) **formation of Earth and our solar system**

16. Cosmic background radiation provides evidence of the

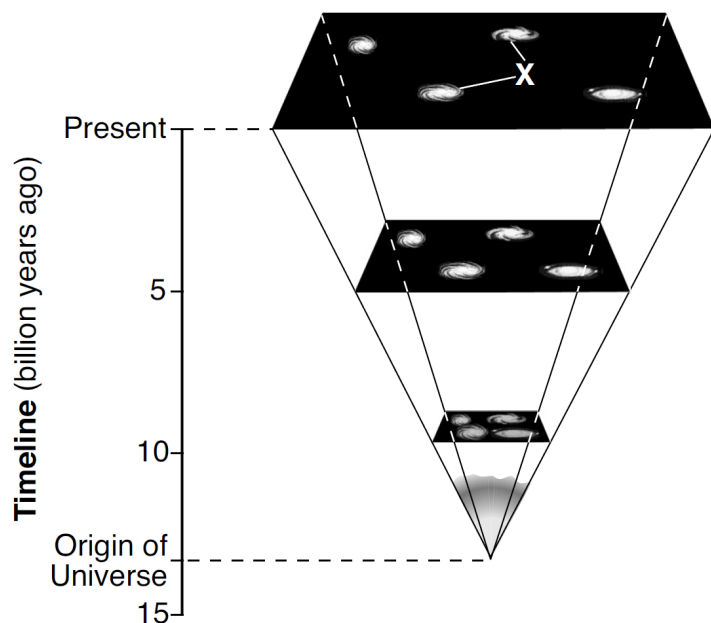
- 1) **Big Bang**
- 2) origin of the Sun
- 3) radioactive decay in Earth's core
- 4) formation of the Milky Way Galaxy

17. The Milky Way can best be described as

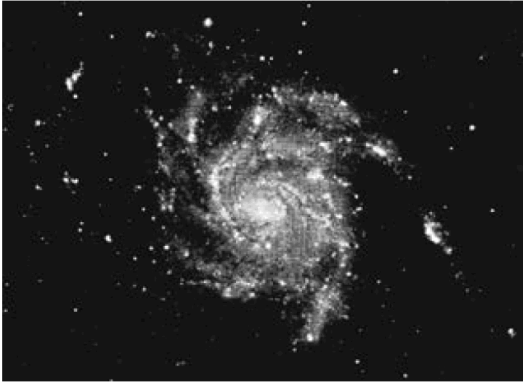
- 1) an elliptical galaxy
- 2) a collection of stars orbiting the Sun
- 3) a star that originated 4600 million years ago
- 4) **one of billions of galaxies in the universe**

Modern Astronomy Quiz Review

18. Base your answer to the following question on the diagram below and on your knowledge of Earth science. The diagram represents the expansion of a portion of the universe from its origin until the present. The timeline represents billions of years. Letter *X* indicates two celestial objects.

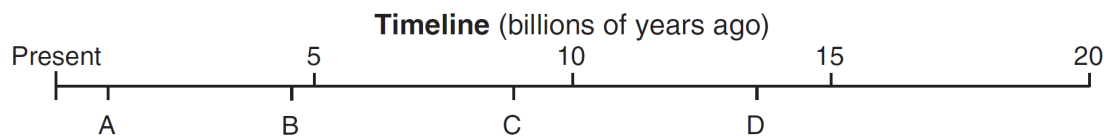


Approximately how many billion years ago (bya) did the Big Bang occur?

- 1) 4.6 bya 2) 10.0 bya 3) **13.8 bya** 4) 15.0 bya
-
19. Scientists who proposed the Big Bang Theory were attempting to explain
- 1) **the origin of the universe**
 - 2) why stars have different luminosities
 - 3) the formation of our solar system
 - 4) how Earth's atmosphere evolved
20. In which sequence are the celestial objects correctly listed in order from the smallest mass to the largest mass?
- 1) **Saturn, solar system, Milky Way, universe**
 - 2) Saturn, universe, Milky Way, solar system
 - 3) Milky Way, Saturn, solar system, universe
 - 4) Milky Way, universe, solar system, Saturn
21. Compared to our solar system, the universe is
- 1) younger, smaller, and contains fewer stars
 - 2) younger, larger, and contains more stars
 - 3) older, smaller, and contains fewer stars
 - 4) **older, larger, and contains more stars**
22. The photograph below shows a feature of the universe as seen through a telescope.
- 
- This feature is best identified as
- 1) **a galaxy**
 - 2) a comet
 - 3) an asteroid
 - 4) a star
23. The theory that the universe is expanding is supported by data from the
- 1) nuclear decay of radioactive materials
 - 2) nuclear fusion of radioactive materials
 - 3) blue shift of light from distant galaxies
 - 4) **red shift of light from distant galaxies**

Modern Astronomy Quiz Review

24. The timeline below represents time from the present to 20 billion years ago. Letters *A*, *B*, *C*, and *D* represent specific times.



Which letter on the timeline best represents the time when scientists estimate that the Big Bang occurred?

- 1) *A* 2) *B* 3) *C* 4) *D*

25. A red shift in the light from very distant galaxies suggests that the universe is

- 1) fixed and stationary
2) moving randomly
3) contracting
4) **expanding**

26. A light year is

- 1) **the distance traveled by light in one year**
2) the distance the Earth moves in one year
3) the time it takes light to go once around the Earth's orbit
4) the time it takes light to travel one year

27. The unit most used by astronomers to express the distances to other galaxies is

- 1) miles
2) kilometers
3) astronomical unit (AU)
4) **Lightyears (LY)**

28. Billions of stars in the same region of the universe are called

- 1) solar systems 3) constellations
2) asteroid belts 4) **galaxies**

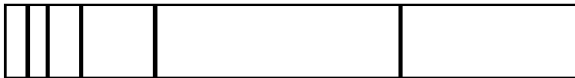
29. Evidence that the universe is expanding is best supported by the observation that the wavelengths of light from distant galaxies are shifted toward the

- 1) red end of the spectrum because they are shortened
2) **red end of the spectrum because they are lengthened**
3) blue end of the spectrum because they are shortened
4) blue end of the spectrum because they are lengthened

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30. The diagrams below represent spectral lines of hydrogen gas observed in a laboratory and the spectral lines of hydrogen gas observed in the light from a distant star.

Spectral Lines of Hydrogen in a Laboratory



Shorter Wavelength

Longer Wavelength

Spectral Lines of Hydrogen from a Distant Star



Shorter Wavelength

Longer Wavelength

Compared to the spectral lines observed in the laboratory, the spectral lines observed in the light from the distant star have shifted toward the

- 1) red end of the spectrum, indicating the star's movement toward Earth
 - 2) **red end of the spectrum, indicating the star's movement away from Earth**
 - 3) blue end of the spectrum, indicating the star's movement toward Earth
 - 4) blue end of the spectrum, indicating the star's movement away from Earth
-

Answer Key
Modern Astronomy Quiz Review

1. 1
 2. 3
 3. 1
 4. 4
 5. 1
 6. 2
 7. 1
 8. 1
 9. 1
 10. 1
 11. 2
 12. 2
 13. 2
 14. 2
 15. 4
 16. 1
 17. 4
 18. 3
 19. 1
 20. 1
 21. 4
 22. 1
 23. 4
 24. 4
 25. 4
 26. 1
 27. 4
 28. 4
 29. 2
 30. 2
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