

Our Solar System

SECTION 28.1 Solar System Overview

In your textbook, read about early ideas.

Write the letter of the term from Column B next to its matching item in Column A.

Column A

Column B

- | | |
|---|----------------------|
| _____ 1. Motion of a planet moving in the opposite direction of the normal direction of planetary motion as observed from Earth | a) Planetesimal |
| _____ 2. Objects that collided and merged to form other various objects in the solar systems | b) Heliocentric |
| _____ 3. Nicolaus Copernicus's model of the solar system in which the planets orbit the Sun | c) Retrograde |
| _____ 4. Oval shape centered on two points instead of one point | d) Ellipse |
| _____ 5. Point in a planet's orbit when it is closest to the Sun | e) Geocentric |
| _____ 6. Defines a planet's elliptical orbit as the ratio of the distance between the foci and the length of the major axis | a) Asteroid |
| _____ 7. Unit of measure that is the average distance between the Sun and Earth (1.4960×10^8 km) | b) Perhelion |
| _____ 8. Large rock in space mainly between the planets Mars and Jupiter | c) Astronomical Unit |
| | d) Eccentricity |
| | e) comet |

In your textbook, read about gravity and orbits.

Use each of the terms below just once to complete the passage.

Questions 8-11 [select from the four choices below]

- a) moon b) Force c) Newton d) acceleration e) Galileo

English scientist (8) _____ developed an understanding of gravity by observing the motion of the (9) _____, the orbits of the planets, and the (10) _____ of falling objects on Earth. He learned that two bodies attract each other with a (11) _____ that depends on their (12) _____ and the (13) _____ between the bodies. This is called the law of (14) _____. He also determined that each planet orbits a point between itself and the Sun. That point is called the (15) _____.

SELECTION begins
below



Questions 12-15 [select from the four choices below]

- a) Center of Mass b) Universal Gravitation c) Distance d) Speed e) masses

SECTION 28.1 Solar System Overview, continued

In your textbook, read about collapsing interstellar clouds and Sun and planet formation.

Write the letter of the item in Column B next to its matching item in Column A.

Column A

- _____ 16. Gas and dust from which stars and planets form
- _____ 17. Force that pulls matter together
- _____ 18. Solid bodies hundreds of kilometers in diameter that merged to form the planets

Column B

- a) Planetesimals
- b) Intersellar clouds
- c) Roche Limit
- d) Gravity
-
- _____ 19. Believed to be the first large planet to develop
- _____ 20. Main element in early interstellar clouds
- _____ 21. Lacking in satellites because of proximity to the Sun

- a) Jupiter
- b) outer planets
- c) inner planets
- d) hydrogen

In your textbook, read about asteroids.

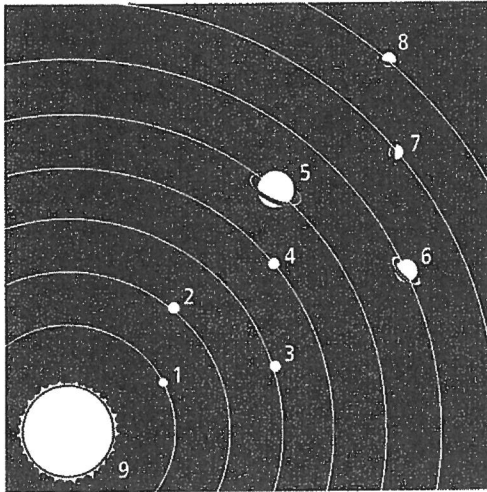
For each statement, write *true* or *false*. a= TRUE b= FALSE

- _____ 22. The Sun formed outside the rotating interstellar cloud.
- _____ 23. Most asteroids are located between the orbits of Mars and Jupiter in the asteroid belt.
- _____ 24. Asteroids are thought to be planetesimals that never formed planets.

Understanding Main Ideas (Part B)

Label the diagram of our solar system by writing the name of each body next to its number. Note that the diagram is not to scale.

7 and draw the symbol

The Solar System

25. Figure 1. _____
 26. Figure 2. _____
 27. Figure 3. _____
 28. Figure 4. _____
 29. Figure 5. _____
 30. Figure 6. _____
 31. Figure 7. _____
 32. Figure 8. _____
 33. Figure 9. _____

Answer the following questions.

34. . Which are the terrestrial planets?

- (A) Figures 1 to 4 (B) Figures 5 to 8 (C) all EVEN number Figures (D) all ODD number Figures

35. i. Which are the gas giant planets?

- (A) Figures 1 to 4 (B) Figures 5 to 8 (C) all EVEN number Figures (D) all ODD number Figures

36. . Which planet has a reddish color caused by a high iron content?

- (A) Figure 2 (B) Figure 4 (C) Figure 6 (D) Figure 8

37. Which planet has the largest mountain in our solar system? What is this mountain called?

- (A) Figure 2 (B) Figure 3 (C) Figure 4 (D) Figure 5

38. Which planet Figure would float because its density is less than water?

- (a) Figure 1 (b) Figure 5 (c) Figure 6 (d) Figure 7 (e) Figure 8

39. Which planet Figure DOESNOT have rings around the planet?

- (a) Figure 4 (b) Figure 5 (c) Figure 6 (d) Figure 7 (e) Figure 8

40. Which planet Figure has the Largest Moon orbiting it?

- (a) Figure 3 (b) Figure 9 (c) Figure 6 (d) Figure 5 (e) Figure 8

41. Which planet Figure has a natural satellite orbiting it?

- (a) all but Figures 1 & 8 (c) all but Figures 2 & 4
 (b) all but Figures 1 & 2 (d) all but Figures 3 & 2

Think Critically

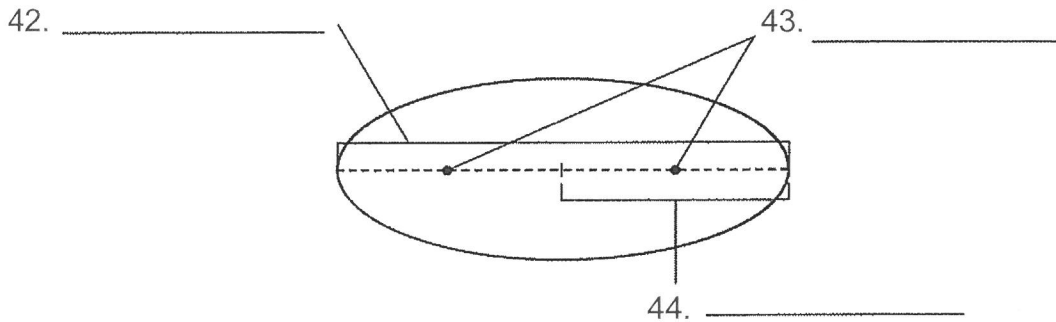
Planetary Motion

Kepler's laws of planetary motion demonstrate that each planet's orbit around the Sun sweeps out in a shape called an ellipse, rather than a circle. This means that a planet does not maintain a constant distance from the Sun. Kepler found that an imaginary line between the Sun and a planet sweeps out equal amounts of area in equal amounts of time. Kepler also discovered a mathematical relationship between the size of a planet's ellipse and its orbital period.

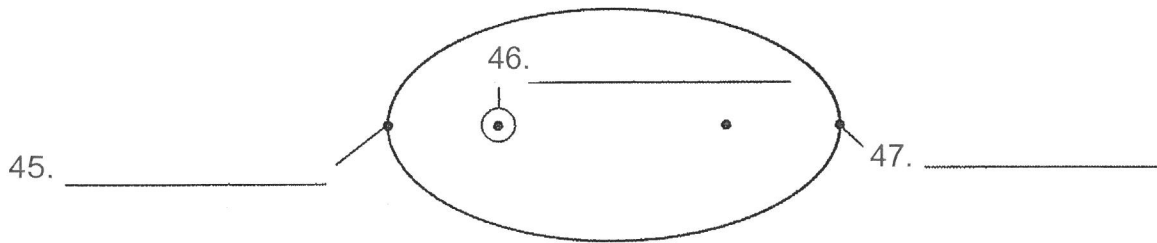
Use the terms below to Label the diagram by selecting the BEST answer for each question:

- (a) Foci (b) semimajor axis (c) Major axis (d) Aphelion

Elliptical Orbit of a Planet



Orbit of Pluto



Use the terms below to Label the above diagram by selecting the BEST answer for each question:

- (a) Perihelion (b) Sun (c) Major axis (d) Aphelion (e) Semimajor axis
