Solar System Planets

Use this key to check answers and read the explanations.

1. Which planet lies between Mercury and Earth?
   - A. Venus
   - B. Mars
   - C. Jupiter
   - D. Neptune

   Correct answer: A. Venus
   Venus is second from the Sun, after Mercury and before Earth.

2. Which planet comes immediately after Saturn when the planets are listed from nearest to farthest from the Sun?
   - A. Neptune
   - B. Jupiter
   - C. Uranus
   - D. Mars

   Correct answer: C. Uranus
   Saturn is sixth in the sequence, and Uranus is seventh.

3. Which of the eight planets has the largest average distance from the Sun?
   - A. Mercury
   - B. Neptune
   - C. Earth
   - D. Saturn

   Correct answer: B. Neptune
   Neptune is the eighth and outermost recognized planet.

4. Which of these groups contains only rocky planets?
   - A. Earth, Mars, and Neptune
   - B. Venus, Earth, and Jupiter
   - C. Mercury, Saturn, and Venus
   - D. Mercury, Earth, and Mars

   Correct answer: D. Mercury, Earth, and Mars
   Mercury, Venus, Earth, and Mars have rocky surfaces. Jupiter, Saturn, Uranus, and Neptune are giant planets.

5. Which of the eight planets has the smallest diameter?

A. Mars
B. Mercury
C. Earth
D. Venus

Correct answer: B. Mercury
Mercury is the smallest of the eight planets. Its diameter is only a little larger than that of Earth’s Moon.

6. Which planet contains Olympus Mons, a volcano much higher than Mount Everest?

A. Mars
B. Venus
C. Mercury
D. Uranus

Correct answer: A. Mars
Olympus Mons is a giant shield volcano on Mars.

7. What would a close look reveal in Saturn’s bright rings?

A. A ring of identical rocky planets
B. One solid sheet joined to the planet
C. Stationary clouds that never orbit
D. Many separate ice and rock particles in orbit

Correct answer: D. Many separate ice and rock particles in orbit
Saturn’s rings consist of countless orbiting pieces of ice and rock. Their sizes range from small particles to large chunks.

8. Which planet completes one rotation in about ten hours, the shortest rotation period among the planets?

A. Earth
B. Mars
C. Jupiter
D. Mercury

Correct answer: C. Jupiter
Jupiter spins once in about ten hours. Its day in this sense is shorter than those of the rocky planets.

9. Which planet spins about an axis that lies nearly in the plane of its orbit?

A. Uranus
B. Neptune
C. Jupiter
D. Mars

Correct answer: A. Uranus
Uranus is tilted by nearly 98 degrees relative to the perpendicular to its orbital plane.

10. Which planet takes the longest to travel once around the Sun: Venus, Mars, Jupiter, or Saturn?

A. Jupiter
B. Venus
C. Mars
D. Saturn

Correct answer: D. Saturn
Saturn orbits farther from the Sun than the other three. Its year lasts about 29 Earth years.

11. On Mercury, what does the interval of about 176 Earth days measure?

A. The time to rotate once relative to the distant stars
B. The time to orbit the Sun once
C. The time from one sunrise to the next at a given spot
D. The time for sunlight to travel from the Sun to Mercury

Correct answer: C. The time from one sunrise to the next at a given spot
Mercury combines a slow spin with a short orbit. One complete sunrise-to-sunrise cycle takes about 176 Earth days, twice its 88-day year.

12. Which pair belongs to the ice-giant class rather than the gas-giant class in NASA’s planet grouping?

A. Jupiter and Saturn
B. Uranus and Neptune
C. Earth and Mars
D. Mercury and Venus

Correct answer: B. Uranus and Neptune
Uranus and Neptune have relatively large proportions of heavier materials such as water, methane, and ammonia. Jupiter and Saturn are grouped as gas giants.

13. Imagine standing on Venus and being able to see the horizon through its clouds. In which direction would the Sun rise?

A. South
B. East
C. North
D. West

Correct answer: D. West
Venus rotates in the opposite direction to most planets. Its apparent sunrise would be in the west.

14. Astronomers found small discrepancies in Uranus’s predicted motion. What did that observation help them do in 1846?

A. Predict where to look for Neptune.
B. Measure the thickness of Saturn’s rings.
C. Find the first volcano on Mars.
D. Determine the length of a day on Mercury.

Correct answer: A. Predict where to look for Neptune.
The pull of a more distant planet could account for Uranus’s motion. Calculations guided observations that confirmed Neptune.

15. Neptune was discovered in 1846. It completed its first full orbit since that discovery in 2011. About how long is one Neptunian year?

A. 127 Earth years
B. 82 Earth years
C. 165 Earth years
D. 365 Earth years

Correct answer: C. 165 Earth years
Subtract 1846 from 2011. The resulting 165 years is close to Neptune’s orbital period.