



Comets, Asteroids, and Meteors Practice Problems

by Stan Gibilisco

Review the following concepts if needed:

- [Comets, Asteroids, and Meteors Help](#)
- [Anatomy Of A Comet Help](#)
- [Comet Personalities Help](#)

Comets, Asteroids, and Meteors Practice Problems

A good score is 8 correct. Answers are provided at the end.

1. Major asteroid impacts on the planets

- (a) have never occurred in our Solar System.
- (b) take place only on Jupiter and Saturn.
- (c) were once commonplace in the Solar System.
- (d) produce new comets.

2. A comet might be expected to suddenly become brighter if

- (a) all the icy material in the nucleus has evaporated.
- (b) the tail passes through the corona of the Sun.
- (c) a solar flare occurs.
- (d) its perihelion takes it outside the orbit of the Earth.

3. A spherical swarm of millions or billions of distant comets that surrounds the Solar System is known as the

- (a) Van Allen belt.
- (b) Oort cloud.
- (c) primeval Solar System disk.
- (d) tektite belt.

4. A small asteroid or massive meteoroid that crashes into the Moon can produce

- (a) a comet shower.
- (b) a new comet.
- (c) a crater with rays.
- (d) an Oort cloud around the Moon.

5. The “dirty snowball” model for the structures of comets is sometimes credited to

- (a) Fred Whipple.
- (b) Giuseppe Piazzi.
- (c) Johann E. Bode.
- (d) Johann D. Titius.

6. A meteorite

- (a) has the potential to become a meteor.
- (b) is like a meteor, except smaller.
- (c) is a meteor that strikes the surface of the Earth.
- (d) becomes a meteoroid if it is captured by the gravitational field of a planet.

7. The radiant of a meteor shower

- (a) is always straight overhead.
- (b) is fixed with respect to the constellations.
- (c) is opposite the direction of the Earth's motion through space.
- (d) depends on the number of meteors that fall each hour.

8. The asteroids were discovered in part because astronomers were searching for a planet to fit the orbital "slot" at 2.8 AU based on

- (a) the trajectories of fallen meteorites.
- (b) the behavior of the moons of Jupiter.
- (c) the distribution of impact craters on the Moon.
- (d) a mathematical formula developed by Titius and Bode.

9. After a comet has passed perihelion,

- (a) the tail follows behind the nucleus.
- (b) the tail streams out ahead of the nucleus.
- (c) it breaks up into meteoroids.
- (d) its coma grows larger and brighter.

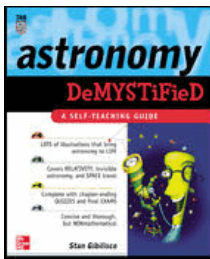
10. The Kuiper belt

- (a) lies outside the orbit of Neptune.
- (b) lies between the orbits of Mars and Jupiter.
- (c) is an intense region of radiation around Jupiter.
- (d) is where comets go to die.

Answers

1. C
2. C
3. B
4. C
5. A
6. C
7. B
8. D
9. B
10. A

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