

Review Quizzes: Rings

Question	Answer
Question 1: Each of the following explains a way we believe rings are formed, EXCEPT one. Which one does not belong?	Rings can be formed by coagulation of material thrown off of the gaseous planet by giant impacts.
Question 2: Why do we believe that the particles in the ring systems must be continuously replenished?	If ring particles are left to themselves, they will eventually collide with other particles, lose energy, and spiral into the gaseous planet.
Question 3: State one fact that is a direct result of these giant planets having what is known as a "roche limit" or "tidal zone."	All rings are located inside Roche Limit.
Question 4: Why are small moons, such as those orbiting inside Jupiter's moon Io, not ripped apart by what must be extreme tidal forces?	These moons are so small that the differential gravitational force across their diameters is not that great.
Question 5: This planet is famous for its extended, glorious ring system that is made up of ice particles of all sizes.	Saturn
Question 6: This planet's rings are barely there, were not discovered until a satellite flew by, and some have weird "arc" structures.	Neptune
Question 7: This planet has particles in its rings with albedos of less than 0.1, dark, smoke-like, described as "gossamer," replenished by small moons.	Jupiter
Question 8: This planet's rings are narrow, with fairly large gaps in between, are tilted with the planet, and contain a pair of shepherd moons.	Uranus
Question 9: Explain how shepherd moons "work" to keep ring particles in a tight, narrow ring.	See on-line lecture notes.