Name _____

How Are Moons Formed?

Short Answer Key

1. The giant impact hypothesis suggests that Earth's moon formed from the debris generated by a massive collision between Earth and a Mars-sized object. The impact melted some of the material, creating a molten disk around Earth. Over time, this material cooled and solidified to form the moon.
2. In the capture mechanism, a moon is captured by a planet's gravity when it is drawn into orbit around the planet due to the planet's gravitational pull.
3. An example of a moon that may have formed through the capture mechanism is Triton, Neptune's largest moon. Triton has a highly inclined and retrograde orbit, suggesting it was likely captured by Neptune's gravity.
4. Accretion involves the gradual growth of moonlets from the dust and gas in a protoplanetary disk. Tiny particles collide and stick together, forming larger bodies. Over millions of years, these moonlets come together to form a moon.
5. The variety of moons in our solar system is influenced by factors such as their formation mechanisms, the composition of their parent planets, and their orbital characteristics. Some moons are rocky, while others are icy. Their sizes, orbits, and histories can differ significantly.