

Distinguish, differentiate, compare and explain what is the Difference between gravity and gravitation. Comparison and Differences.

## **Difference between Gravity and Gravitation**

1. Gravity is the earth's gravitational pull on the body, lying on near the surface of earth. Gravitation is the force of attraction acting between any two bodies of the universe.
2. The force of gravity on body of mass  $m$  is  $F = mg$ , where  $g$  is the acceleration due to the gravity. The formula for gravitational force on a body A of mass  $m_1$  due to a body B of mass  $m_2$  placed distance  $r$  apart is given by  $F = G \frac{m_1 m_2}{r^2}$ .
3. In first, the direction of the force of gravity on a body is along the line joining the body and the center of the earth and it is directed towards the center of the earth. In second, the direction of the force of gravity on a body is along the line joining the body and the center of the earth and it is directed towards the center of the earth.
4. The force of gravity on a body is zero at the center of the earth. The force of gravitation between the two bodies can be zero if the separation between the two bodies become zero.