

Answer on Question#40356 – Physics – Mechanics | Kinematics | Dynamics

Which of these is NOT a statement of Newton's law of universal gravitation?

- a. gravitational force between two particles is attractive as well as repulsive
- b gravitational force acts along the line joining the two particles
- c. gravitational force is directly proportional to the product of the masses of the particles
- d. gravitational force is inversely proportional to the square of the distance of the particles apart

Solution:

Newton's law of universal gravitation:

$$F = G \frac{m_1 m_2}{r^2}$$

The gravitational force is always positive ($m_1 m_2 > 0$; $r^2 > 0 \Rightarrow G \frac{m_1 m_2}{r^2} > 0$), therefore the answer A is wrong, because gravitational force between two particles is always attractive.

Answer: a)