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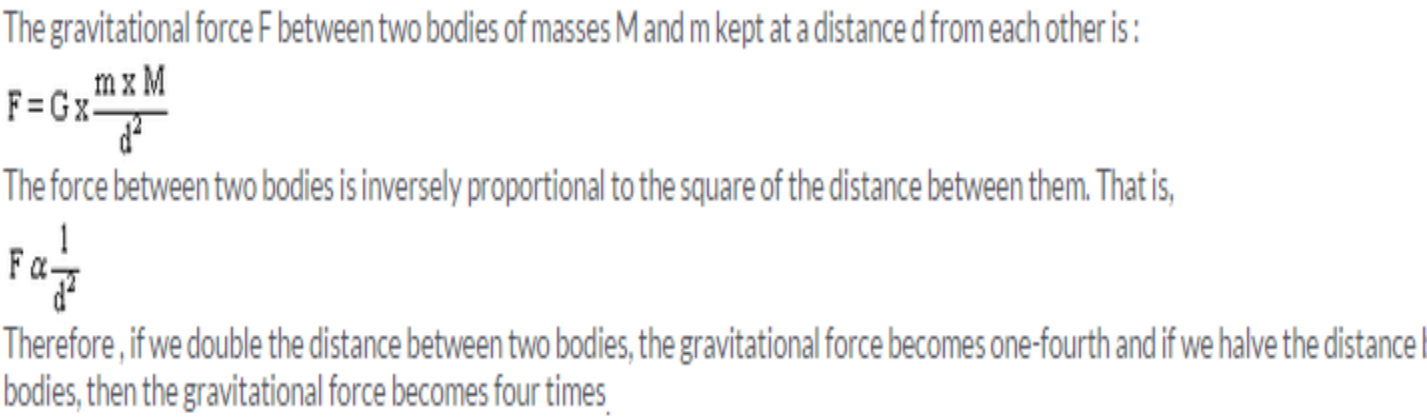
SUBJECT:- PHYSICS CLASS:- IXTH DATE:25/06/XX

SUBJECT TEACHER:- MR. NEEL NIRANJAN

CHAPTER 3. (GRAVITATION)

Question 31:
Describe how the gravitational force between two objects depends on the distance between them.

Solution :
The gravitational force F between two bodies of masses M and m kept at a distance d from each other is :


The gravitational force F between two bodies of masses M and m kept at a distance d from each other is :

$$F = G \times \frac{m \times M}{d^2}$$

The force between two bodies is inversely proportional to the square of the distance between them. That is,

$$F \propto \frac{1}{d^2}$$

Therefore , if we double the distance between two bodies, the gravitational force becomes one-fourth and if we halve the distance b
bodies, then the gravitational force becomes four times

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Question 32:
What happens to the gravitational force between two objects when the distance between them is :
(i) doubled ?
(ii) halved ?

Solution :
(a)If we double the distance between two bodies, the gravitational force becomes one-fourth.
(b)If we halve the distance between two bodies, then the gravitational force becomes four times.