

## **Answer on Question 68661, Physics, Mechanics, Relativity**

### **Question:**

The amount of acceleration an object has is a result of the force applied to the object divided by its mass. This describes which of Newton's laws of motion?

### **Answer:**

This statement describes the Newton's Second Law of Motion. The Newton's Second Law of Motion states that the acceleration of an object is directly proportional to the net force acting on it and is inversely proportional to its mass: We can state the Newton's Second Law of Motion mathematically as:

$$F = ma,$$

where,  $F$  is the net force acting on the object,  $m$  is the mass of the object,  $a$  is its acceleration.

From this equation we can see that the acceleration of the object is equal to the net force applied to the object divided by its mass:

$$a = \frac{F}{m}.$$

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