Answer on Question #40946, Physics, Mechanics | Kinematics | Dynamics

Question:

A Newton is the force:

A. of gravity on 1kg

B. of gravity on 1 g body

C. that gives a 1 g body an acceleration of 1m/s2

D. that gives 1 kg body an acceleration of 1 m/s2

E. that gives a body of 1 kg mass an acceleration of 9.8 m/s2

Answer:

Newton's second law of motion states that

$$F = ma$$

where F is the force applied, m is the mass of the object receiving the force, and a is the acceleration of the object.

The newton is therefore:

$$1\ N = 1\ kg \cdot 1\frac{m}{s^2}$$

So, 1 newton gives 1 kg body an acceleration of 1 m/s2

Answer: D. that gives 1 kg body an acceleration of 1 m/s2