Answer on Question #64379, Physics / Mechanics | Relativity

What is the gravitational acceleration on a planet where a 2-kilogram mass has a weight of 16 newtons on the planet's surface?

Solution:

Weight is the force exerted on a body by gravity.

This is often expressed in the formula

$$W = mg,$$

where W is the weight, m the mass of the object, and g gravitational acceleration.

So, the gravitational acceleration is

$$g = \frac{W}{m}$$

$$g = \frac{16 \text{ N}}{2 \text{ kg}} = 8 \text{ m/s}^2$$

Answer: 8 m/s^2