

### Answer on Question #45342 – Physics – Mechanics | Kinematics | Dynamics

Is it true or false: The force of gravity acting on a baseball can be read directly using an equal arm balance

#### Solution:

Force of gravity is a measurable force. The international standard unit of force is called a Newton (N). On Earth's surface, roughly 0.98N equals the downward force of gravity on 100 grams of mass.

Likewise, one kilogram of mass exerts a downward force of 9.8N. To calculate the force of gravity, physicists use the formula

$$F = ma$$

(force = mass · acceleration).

Since the acceleration of gravity is  $9.8 \frac{m}{s^2}$  on Earth – we can easily calculate the Newton force of any mass.

Using equal arm balance we can find mass of the baseball, but to find the force of gravity we also need to multiply mass on the  $9.8 \frac{m}{s^2}$ . Since we can't multiply mass directly using equal arm balance, thus the answer is false

**Answer:** false.