

Answer on Question #58164-Physics-Mechanics-Relativity

Use gravitational force as 10n, weight is measured in n and mass is measured in kg. Acceleration at 30ms negative square 1000kg=1 ton 1000mg=1kg

1. A loaded truck weighing 35 tonnes was accelerating at 30ms negative square and hit a stable rock. Calculate the force on the rock.

Solution

The force on the rock is given by the Second Newton's law:

$$F = ma = 35 \cdot 1000\text{kg} \cdot 30 \frac{m}{s^2} = 1050000 \text{ N} = 1050 \text{ kN}.$$

Answer: 1050000 N = 1050 kN.