

PROBLEM 1-14

Statement: A 360-gram mass is accelerated at 250 cm/sec². Find the force in N needed for this acceleration.

Given: Mass $M := 360\text{ gm}$ Acceleration $a := 250 \frac{\text{cm}}{\text{sec}^2}$

Solution: See Mathcad file P0114.

1. To determine the force required, multiply the mass value, in kilograms, by the acceleration in meters per second squared.

Convert mass to kg $M = 0.360 \cdot \text{kg}$

Convert acceleration to meters per second squared: $a = 2.5 \text{ m} \cdot \text{s}^{-2}$

$F := M \cdot a$ $F = 0.900 \cdot \text{N}$