Answer on Question 48708, Physics, Mechanics — Kinematics — Dynamics The acceleration, a, of an object produced when a force is applied is given by the following formula, where F represents the force acting on the object and m represents the mass of the object.

$$a = F/m$$

If a has units of meters per second squared and m has units of grams, what must be the units of F?

A. grams B. meters per second C. grams-meters per second D. grams-meters per second squared

Solution

$$F = ma$$

$$[F] = [gr] \cdot [m/s^2] = [m \cdot gr/s^2]$$

Answer is D. grams-meters per second squared.

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