

## Answer on Question 63498, Physics, Mechanics

### Question:

A car travelling at a speed of  $60 \text{ m/s}$  has  $5040000 \text{ J}$  of kinetic energy. Determine the mass of the car.

### Solution:

By the definition of the kinetic energy we have:

$$KE = \frac{1}{2}mv^2,$$

here,  $v$  is the speed of the car,  $m$  is the mass of the car.

From this formula we can find the mass of the car:

$$m = \frac{2KE}{v^2} = \frac{2 \cdot 5040000 \text{ J}}{\left(60 \frac{\text{m}}{\text{s}}\right)^2} = 2800 \text{ kg.}$$

### Answer:

$$m = 2800 \text{ kg.}$$