

Answer on Question #62640-Physics-Mechanics

What is the Linear Momentum of a car with 15 Newtons and an acceleration of 30.0 seconds?

Solution

Assume that initial linear momentum was zero (car was at rest).

Final linear momentum is

$$p_f = p_i + I = 0 + I = I.$$

I is the impulse.

$$I = F\Delta t = 15 \cdot 30 = 450 \frac{kgm}{s}.$$

So,

$$p_f = 450 \frac{kgm}{s}.$$

Answer: $450 \frac{kgm}{s}$.