

### Question 22834

Linear momentum is a mass of body, multiplied by velocity:  $\vec{p} = m\vec{v}$ ,  $p = |p| = m|v| = mv$ . In order for car to have the same momentum,  $p_1 = p_2$ , where  $p_1$  is the momentum of the car, and  $p_2$  is the momentum of the truck. Hence,  $m_1 v_1 = m_2 v_2 \Rightarrow v_1 = \frac{m_2}{m_1} v_2 \approx 60,62 \text{ m/s}$ .