

Answer on Question #58188 – Physics – Mechanics | Relativity

Two trucks are travelling along a straight line with the leading truck travelling at 20 km/hr and the following truck travelling at 30 km/hr.

If the leading truck has a mass of 10 tonnes and the velocity of the two trucks after Impact is 26 km/hr find the mass of the second truck.

Solution

According to the conservation of momentum law:

$$m_1 v_1 + m_2 v_2 = (m_1 + m_2)v$$
$$m_2 = m_1 \frac{v - v_1}{v_2 - v} = \frac{26 - 20}{30 - 26} 10 \text{ tonnes} = 15 \text{ tonnes}$$

Answer: 15 tonnes.