

TOPIC

Engineering Mechanics (Statics and Dynamics) – Section VII – Question 14

QUESTION

Object A has a mass of 3 kg and is moving to the right with a speed of 10m/s. Object B has a mass of 5 kg and is moving to the left with a speed of 8 m/s. If the coefficient of restitution is 0.8, the speed in m/s of A and B just after impact most nearly is



- A) $V_{Af} = 9.75, V_{Bf} = 9.35$
- B) $V_{Af} = 10.25, V_{Bf} = 4.15$
- C) $V_{Af} = 16.6, V_{Bf} = 31$
- D) $V_{Af} = 2.25, V_{Bf} = 3.35$

HINT:

- (1) This is a direct central impact problem. You need two equations.
 - a) Momentum in x -direction
 - b) Coefficient of restitution (e)
- (2) Be careful with signs, since momentum is a vector.

CONTRIBUTOR

Karim Nohra