

- 9 Two objects X and Y move directly towards each other. The objects have the same mass. Object X has a velocity of 5.0 m/s to the right. Object Y has a velocity of 3.0 m/s to the left.



Object X and object Y collide and stick together.

What is their velocity after colliding?

- A** 1.0 m/s to the left
B 1.0 m/s to the right
C 4.0 m/s to the left
D 4.0 m/s to the right
- 10 Brakes are used to slow down a moving car.
Into which form of energy is most of the kinetic energy converted as the car slows down?
A chemical
B elastic
C thermal
D sound
- 11 A man carries 20 tiles from the ground to the roof of a house. Each tile has a mass of 1.2 kg. The roof of the house is 15 m above the ground.
How much work does the man do against gravity on the tiles in carrying them to the roof?
A 36 J **B** 180 J **C** 360 J **D** 3600 J
- 12 A car is moving along a straight horizontal road. The car has 1.6 MJ of kinetic energy. The car accelerates for 20 s until the kinetic energy of the car increases to 2.5 MJ.
What is the minimum average power developed by the car engine for this acceleration?
A 45 W **B** 205 W **C** 45 kW **D** 205 kW