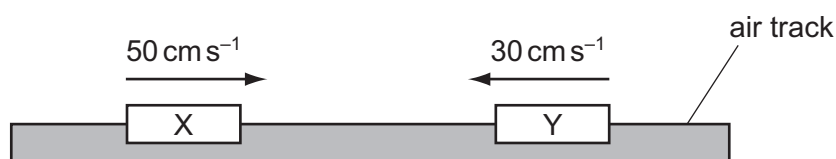


- 12 Two equal masses X and Y are moving towards each other on a frictionless air track as shown. The masses make an elastic collision.



Which row gives possible velocities for the two masses after the collision?

	velocity of X	velocity of Y
A	zero	20 cm s^{-1} to the right
B	10 cm s^{-1} to the right	10 cm s^{-1} to the right
C	20 cm s^{-1} to the left	zero
D	30 cm s^{-1} to the left	50 cm s^{-1} to the right

- 13 Which statement is correct with reference to perfectly elastic collisions between two bodies?
- A** Neither total momentum nor total kinetic energy need be conserved but total energy must be conserved.
 - B** Total momentum and total energy are conserved but total kinetic energy may be changed into some other form of energy.
 - C** Total kinetic energy and total energy are both conserved but total momentum is conserved only if the two bodies have equal masses.
 - D** Total momentum, total kinetic energy and total energy are all conserved.
- 14 Which statement best describes a couple?
- A** a pair of forces of equal magnitude acting in opposite directions which produce rotational motion but not translational motion
 - B** a pair of forces of equal magnitude acting in opposite directions which produce translational motion but not rotational motion
 - C** a pair of forces of equal magnitude acting in the same direction which produce rotational motion but not translational motion
 - D** a pair of forces of equal magnitude acting in the same direction which produce translational motion but not rotational motion