10 A mass accelerates uniformly when the resultant force acting on it

    A   is zero.

    B   is constant but not zero.

    C   increases uniformly with respect to time.

    D   is proportional to the displacement from a fixed point.

**11** A molecule of mass m travelling horizontally with velocity u hits a vertical wall at right angles to the wall. It then rebounds horizontally with the same speed.

What is its change in momentum?

    A   zero   **B** mu **C** $-mu$ **D** $-2mu$

12 Two balls X and Y approach each other along the same straight line and collide elastically.

Their speeds are u_X and u_Y respectively. After the collision they move apart with speeds v_X and v_Y respectively. Their directions are shown on the diagram.
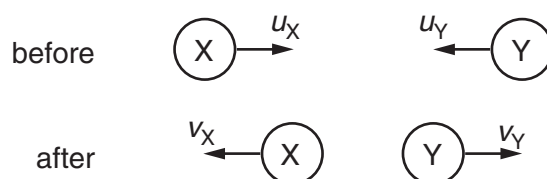
Which of the following equations is correct?

    A $u_X + u_Y = v_X + v_Y$

    B $u_X + u_Y = v_X - v_Y$

    C $u_X - u_Y = v_X + v_Y$

    D $u_X - u_Y = v_X - v_Y$