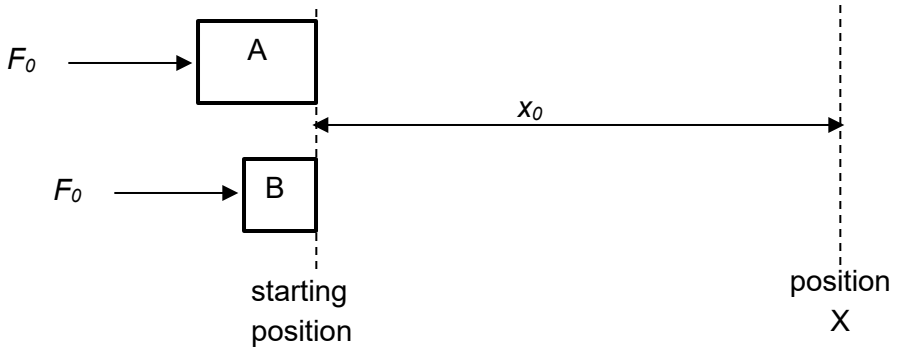
9 Carts A and B are initially at rest on a frictionless, horizontal surface. A constant force F_0 is applied to each cart as it travels from its starting position as shown in the figure. The mass of cart A is more than the mass of cart B.



Consider the kinetic energy E, and momentum p, of the carts at position X, a distance x_0 from the starting position. Subscripts A and B denote cart A and B respectively.

Which of the following is correct?

A $E_A < E_B$ and $p_A < p_B$

B $E_A < E_B$ and $p_A = p_B$

C $E_A = E_B$ and $p_A = p_B$

D $E_A = E_B$ and $p_A > p_B$