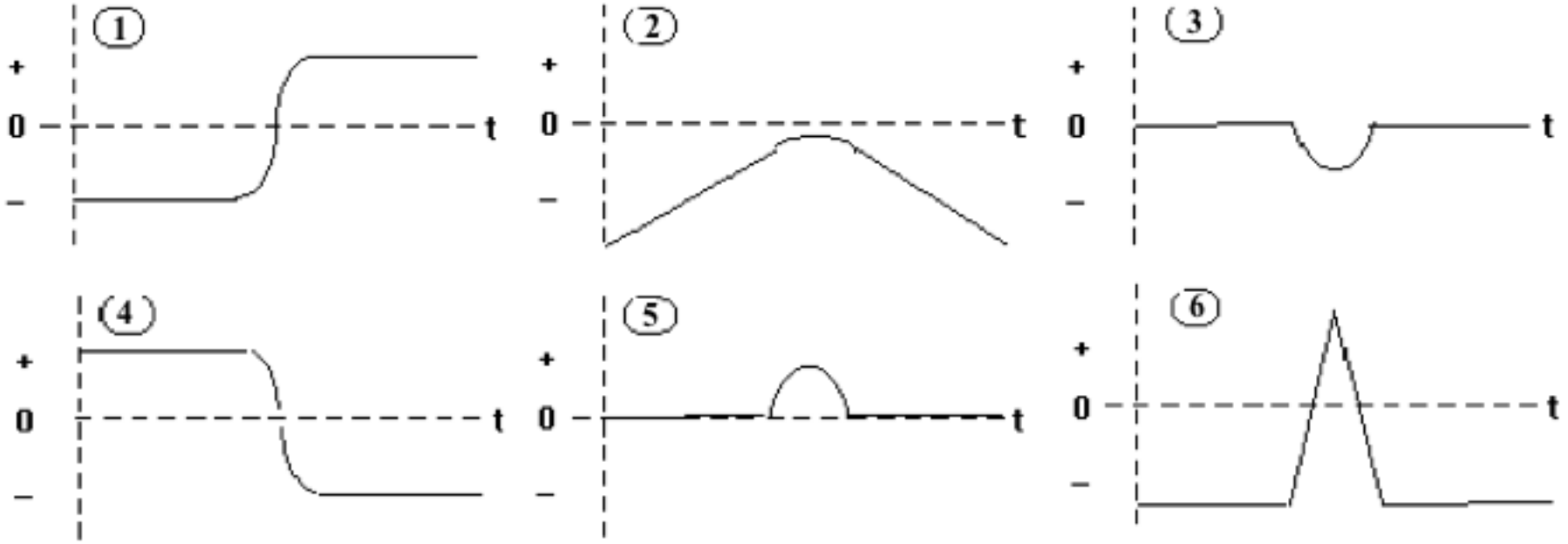
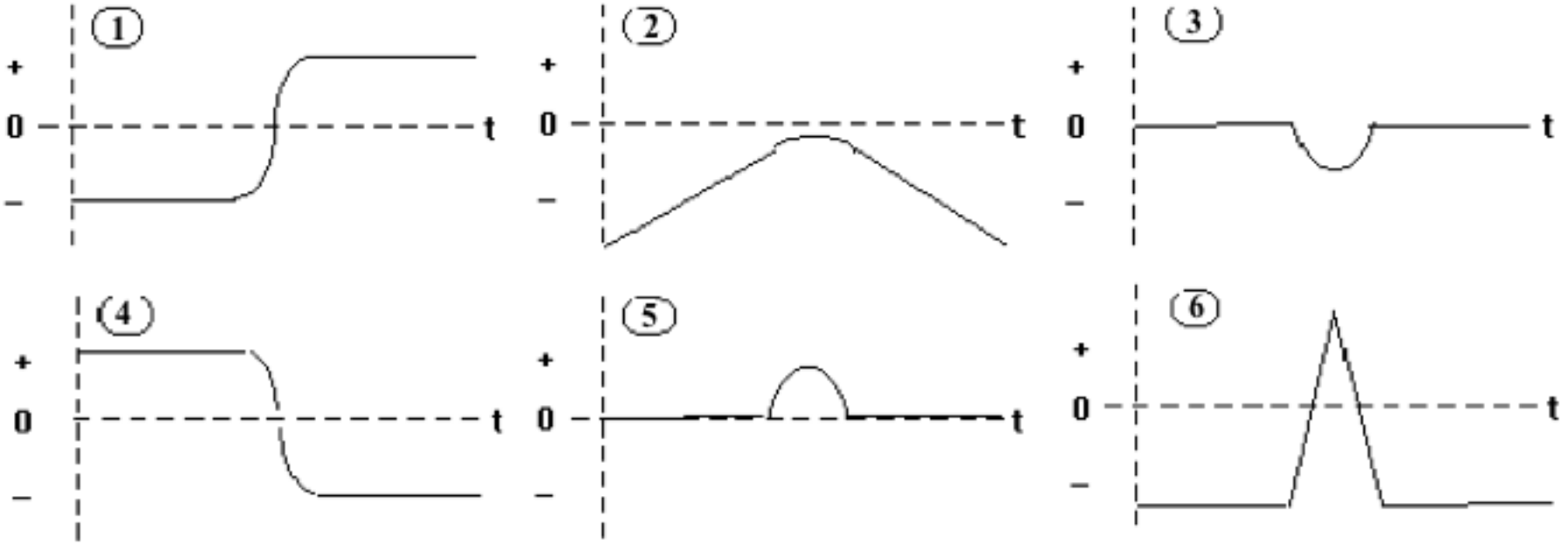
Two carts on an air track are pushed towards each other. Initially, cart 1 moves in the +x direction and cart 2 moves in the -x direction. They bounce off each other elastically. Identify which graph is a possible display of **the momentum of cart 1** as a function of time.



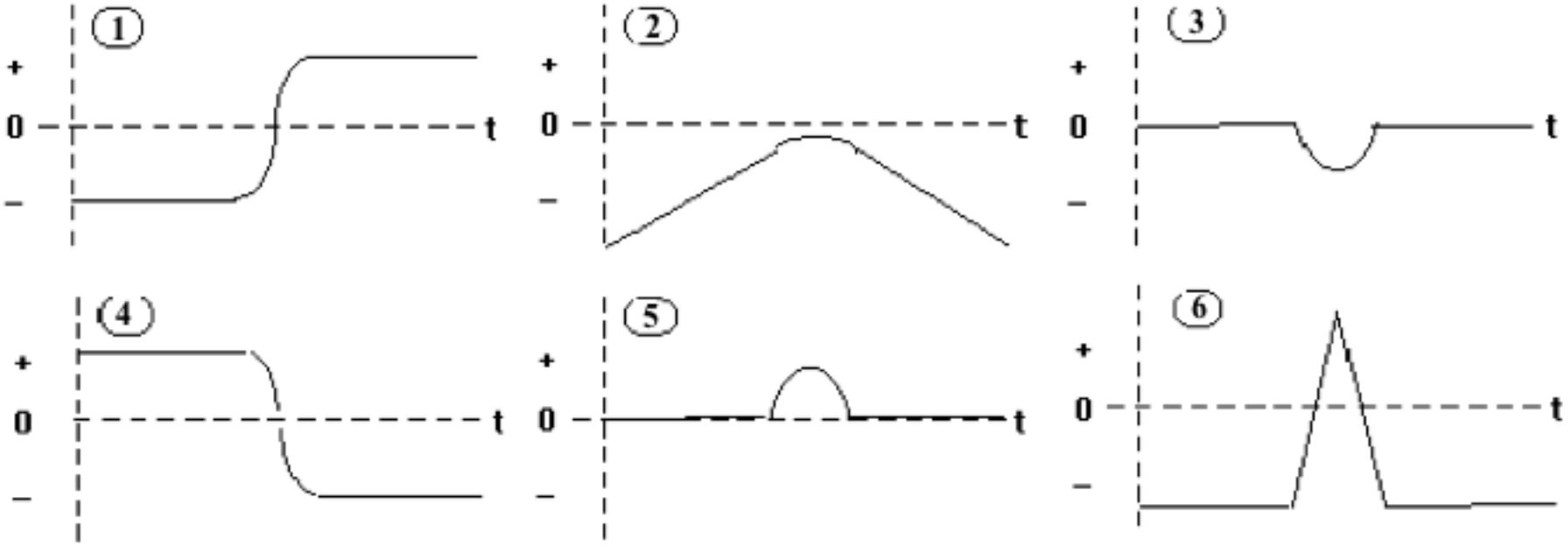
7. None of these work.

Two carts on an air track are pushed towards each other. Initially, cart 1 moves in the +x direction and cart 2 moves in the -x direction. They bounce off each other elastically. Identify which graph is a possible display **the force on cart 2** as a function of time.



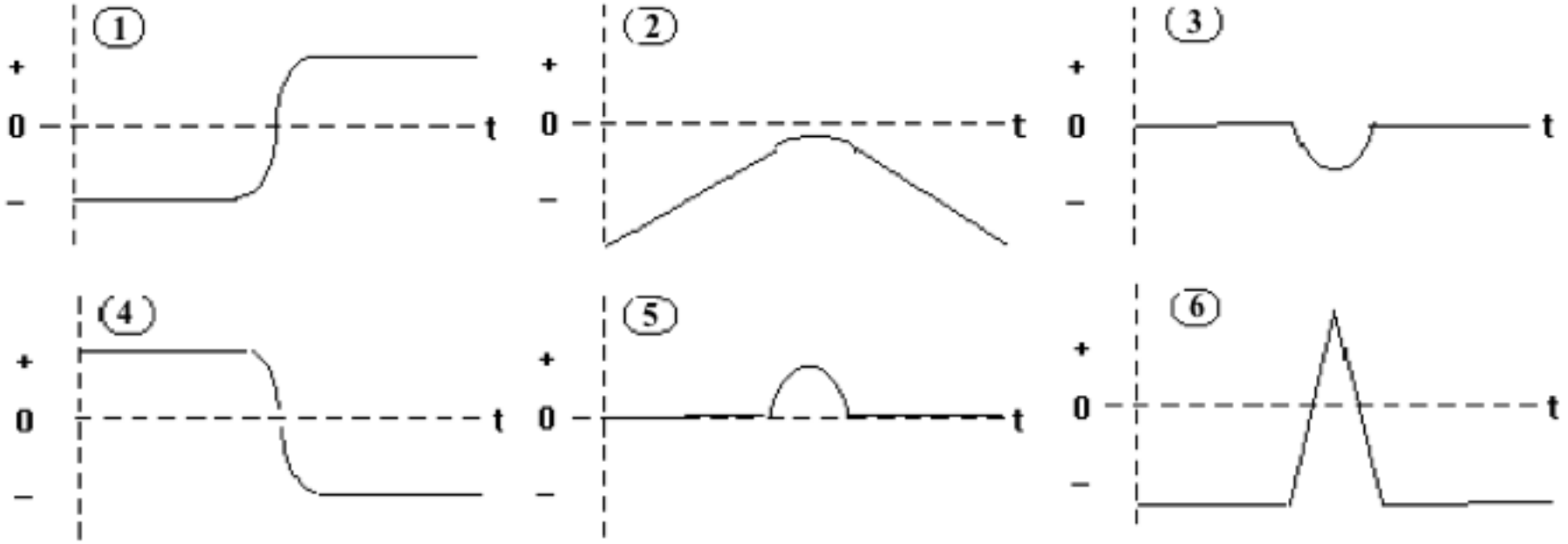
7. None of these work.

Two carts on an air track are pushed towards each other. Initially, cart 1 moves in the +x direction and cart 2 moves in the -x direction. They bounce off each other elastically. Identify which graph is a possible display of **the position of cart 1** as a function of time.



7. None of these work.

Two carts on an air track are pushed towards each other. Initially, cart 1 moves in the +x direction and cart 2 moves in the -x direction. They bounce off each other elastically. Identify which graph is a possible display of **the position of cart 2** as a function of time.



7. None of these work.

Is it possible for a system of interacting objects to conserve momentum but not mechanical energy (kinetic + potential)?

1. Yes
2. No

Is either momentum, mechanical energy, or both conserved for the following system?

—- **A ball thrown straight upward**.

1. Momentum only
2. Mechanical energy only
3. Both momentum & ME
4. Neither