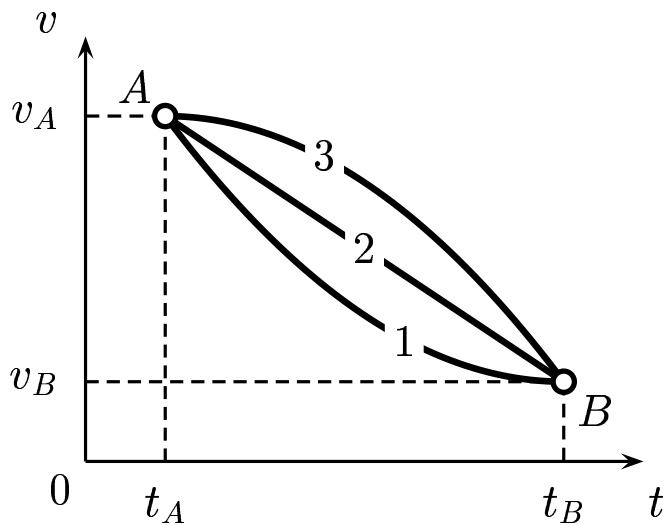


Consider three velocity curves between time points A and B .



The position displacement

$$S_{AB} \equiv s_B - s_A,$$

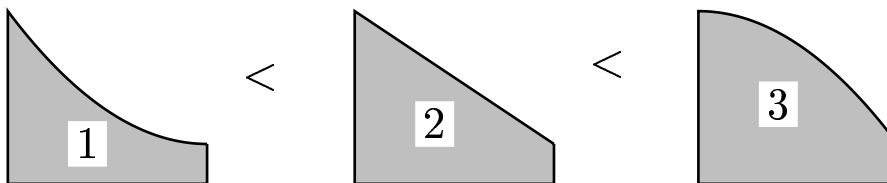
when a is constant.

Choose the correct relationship among the displacement S_1 , S_2 , and S_3 , where S_1 , S_2 , and S_3 are the displacements along the velocity curves 1, 2, and 3 (shown in the figure).

- A) $S_1 < S_2 < S_3$
- B) $S_1 = S_2 = S_3$
- C) $S_1 > S_2 > S_3$

$$\Delta s \equiv \int_A^B v dt$$

By inspection $\text{area}(1) < \text{area}(2) < \text{area}(3)$, in turn $S_1 < S_2 < S_3$.
It therefore follows that



Answer **A**.