ACT

A railroad car is coasting along a horizontal track with speed V when it runs into and connects with a second identical railroad car, initially at rest. Assuming there is no friction between the cars and the rails, what is the speed of the two coupled cars after the collision?

A. V

B. V/2

C. V/4

D. 0

$$\Sigma\ P_{initial} = \Sigma\ P_{final}$$

$$M\ V = M\ V_f + M\ V_f$$

$$V = 2V_f$$

$$V_f = V/2$$

Demo with gliders