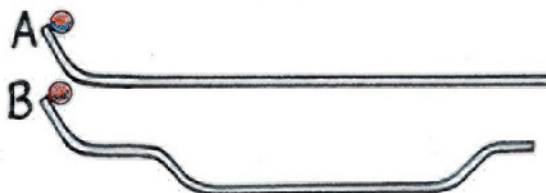


# FIGURING PHYSICS

A pair of identical balls are simultaneously released on a pair of equal-length tracks, A and B, as shown. Both balls reach the ends of their tracks at the same

- A. time.
- B. speed.
- C. Both of these.
- D. Neither of these.



Additionally, both balls will reach the ends of their tracks with the same

- E. momentum.
- F. kinetic energy.
- G. Both of these.
- H. Neither of these.

## Answers, B and G.

In a race, the ball on track B finishes first because it has a higher average speed. That's because its speed along the lower part is greater than the speed of the ball along track A. Likewise for the speeds on the down and up slopes (both with greater average speed than the speed along track A). So average speed is greater for track B. Final speeds are the same, but the times are not.

Since both balls have the same mass, final speed, and direction, they have the same final momentum and the same final kinetic energy on either track.

On track B, the amount of speed gained entering the dip is the same amount lost climbing out of the dip. So both balls end up with the same final speed.



Hewitt  
Drewitt!