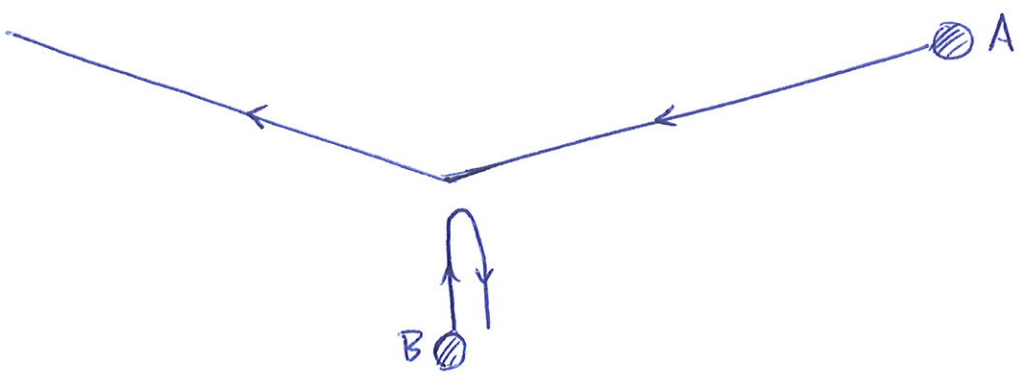
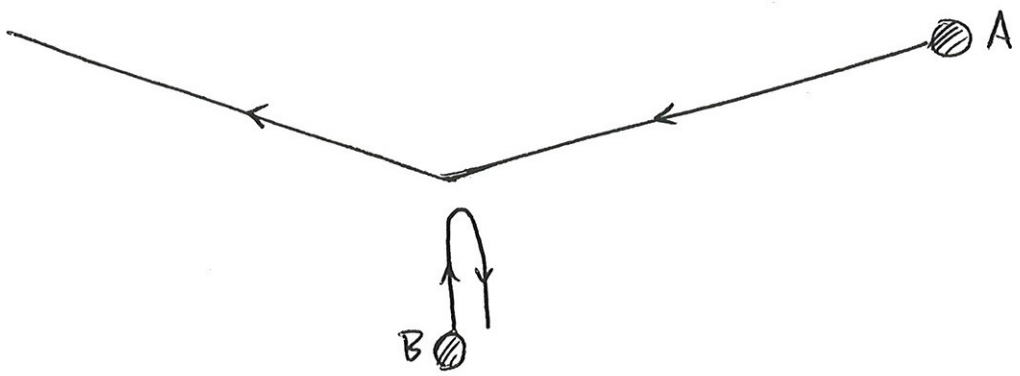


In the new frame of reference, the <u>proper time</u> for ball A between firing and collision is

A) greater than the proper time for ball B between firing and collision

B) the same as the proper time for ball B between firing and collision

C) less than the proper time for ball B between firing and collision.



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proper time = actual time that passes on ball's clock
- same in any frame of reference

$\tau_A = \tau_B$ since setup is completely symmetrical in original frame.

Which of the following is NOT true of the relativistic formula for momentum $\vec{p} = \gamma m \vec{u}$?

A) It reduces to the old formula $\vec{p} = m\vec{u}$ for $|\vec{u}| \ll c$.

B) It goes to infinity $|\vec{p}| \to \infty$ for $|\vec{u}| \to c$.

C) It is the same in all frames of reference.

D) The sum of $\vec{p}$ for all objects is the same before and after any collision

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Not true since object can be at rest in one frame ($\vec{p} = 0$) but not in another.