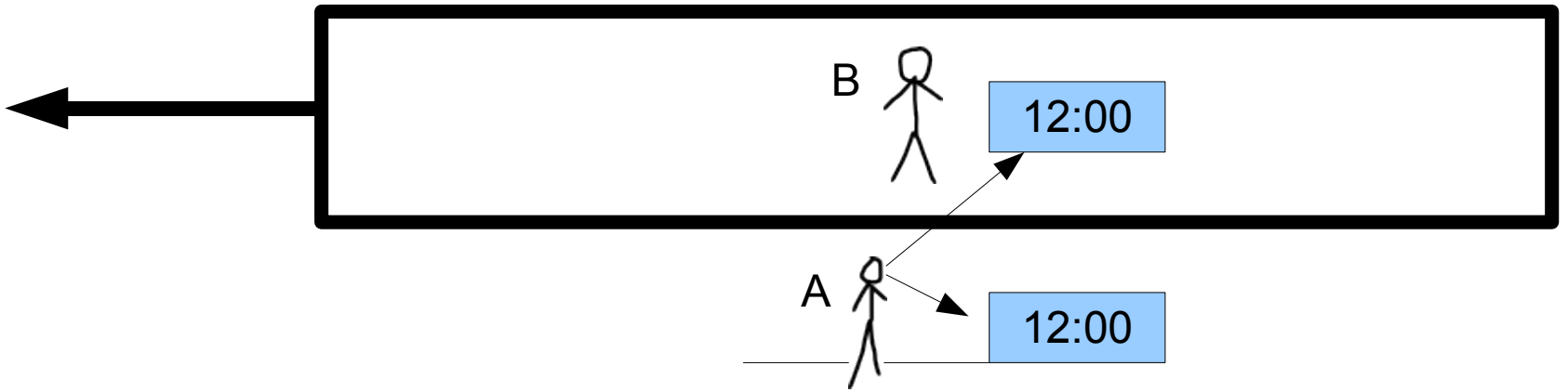
Anne observes that both her clock and Bart's clock read 12:00 when Bart passes her on a train going at 0.866c.



What does Bart observe Anne's clock to read when he passes her?

A) 12:00

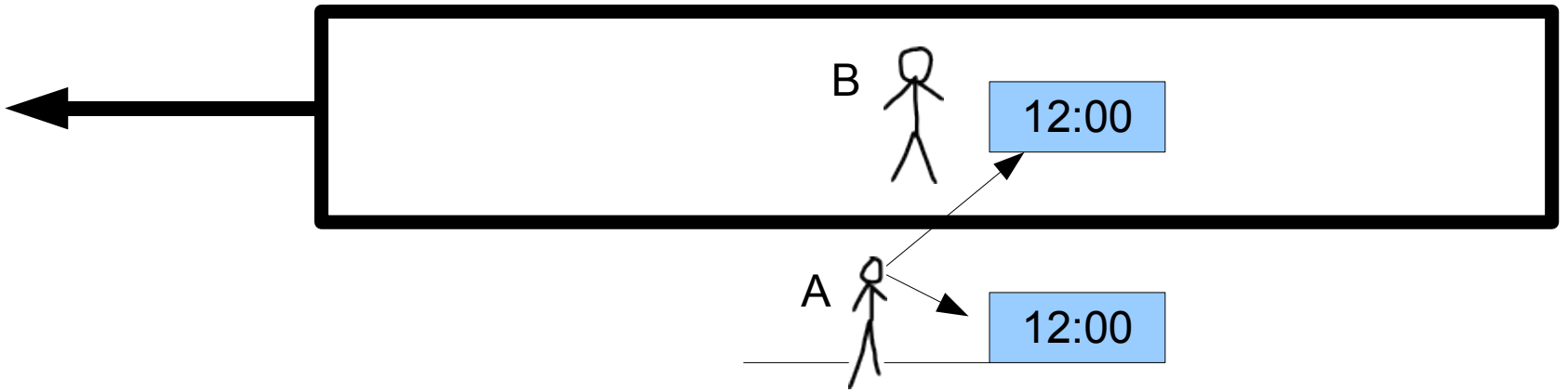
B) An earlier time

C) A later time

D) Either B or C, but I am not sure which...

E) We don't have enough information to answer

Anne observes that both her clock and Bart's clock read 12:00 when Bart passes her on a train going at 0.866c.



What does Bart observe Anne's clock to read when he passes her?

A) 12:00

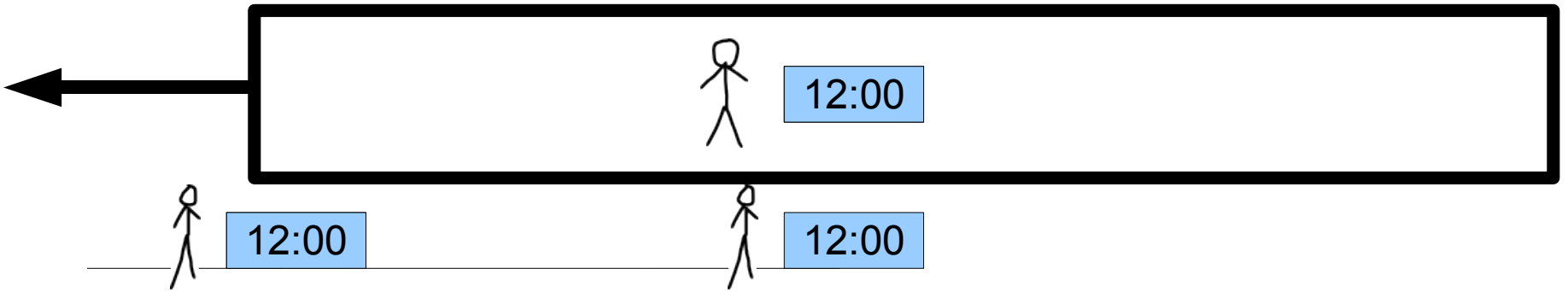
B) An earlier time

C) A later time

D) Either B or C, but I am not sure which...

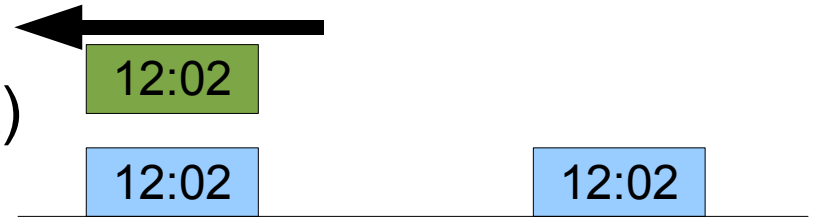
E) We don't have enough information to answer

When two or more observers are present at the same event (at the same place in space and at the same time), their 'stories' must match. Eg: Anne and Bart look at each other's clock when the pass really close to each other. Anne says later "my clock was three minutes fast compared with Bart's" and Bart says later "my clock was three minutes slow compared to Anne's". If Anne thinks the clocks agree, Bert thinks the clocks agree.

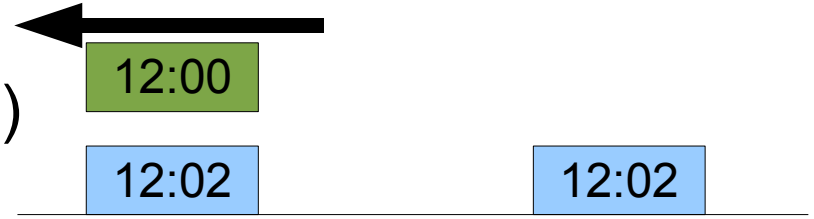


Some time after Bart passes Anne, he gets to a friend of Anne's whose clock is synchronized with Anne's. Which of the following represents a possible observation of the clock readings?

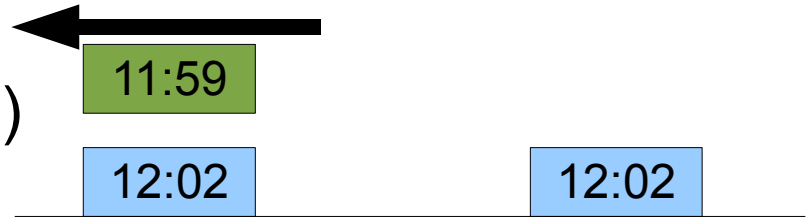
A)



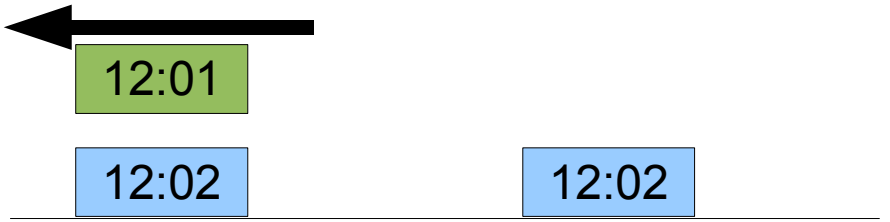
B)



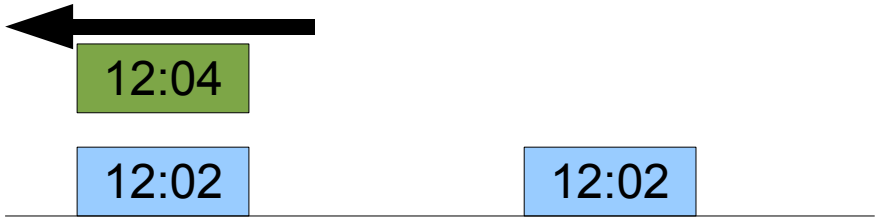
C)

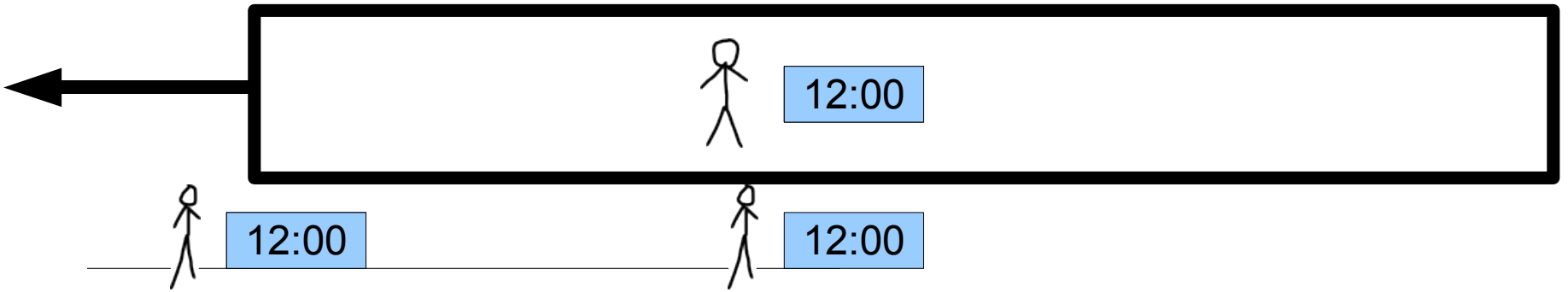


D)



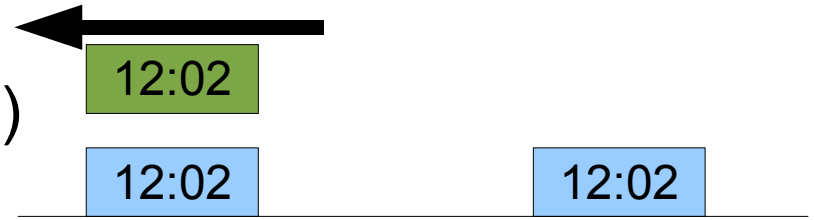
E)



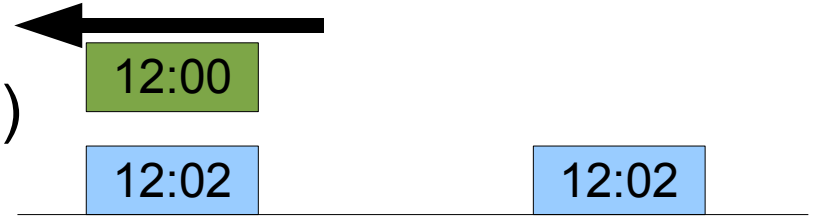


Some time after Bart passes Anne, he gets to a friend of Anne's whose clock is synchronized with Anne's. Which of the following represents a possible observation of the clock readings?

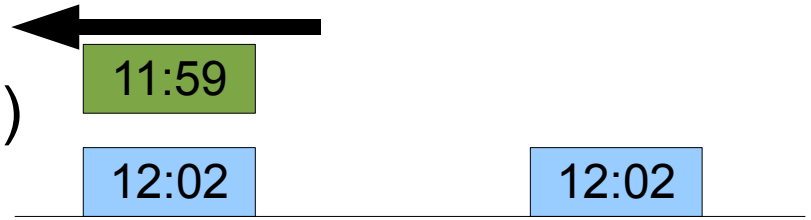
A)



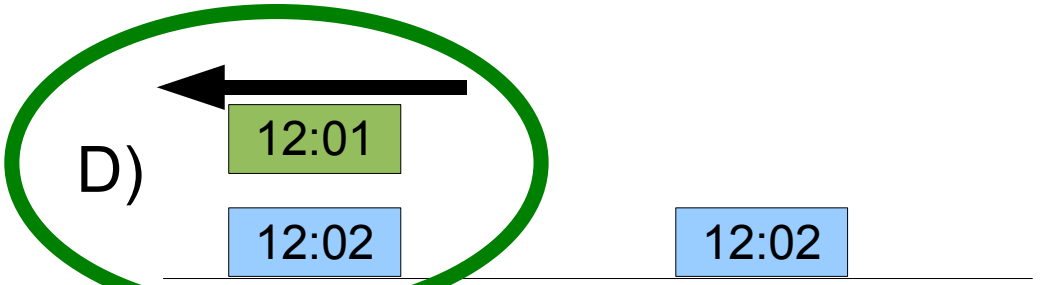
B)



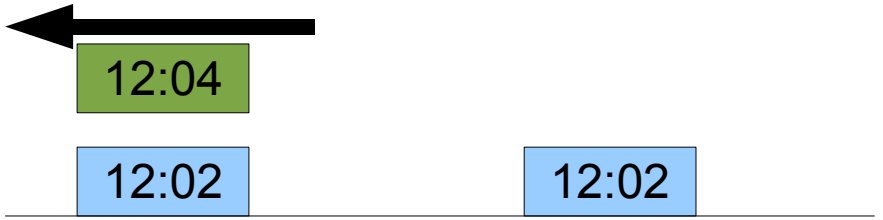
C)



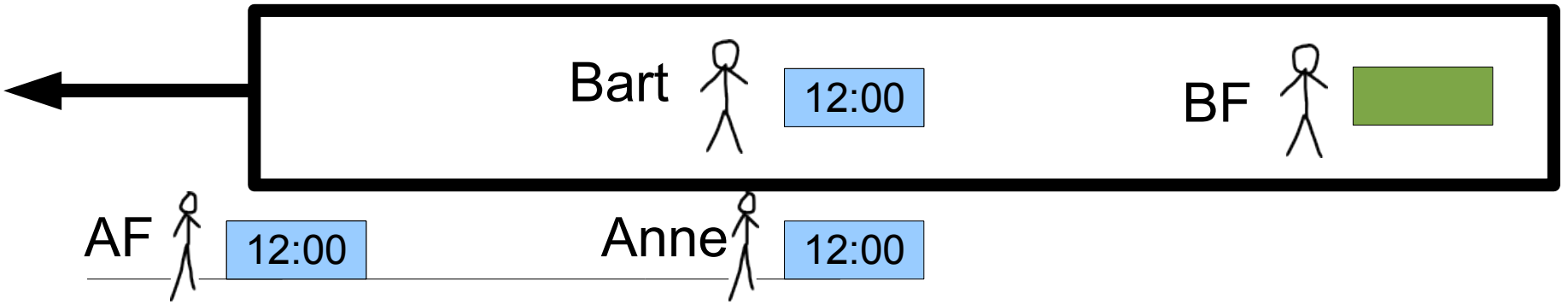
D)



E)

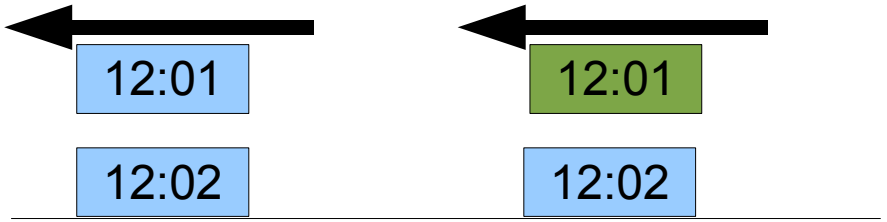


Bert's clock is moving with respect to an array of stationary clocks (Anne's and her friends'). His clock runs slow - it will show a time after 12:00 but earlier than 12:02.

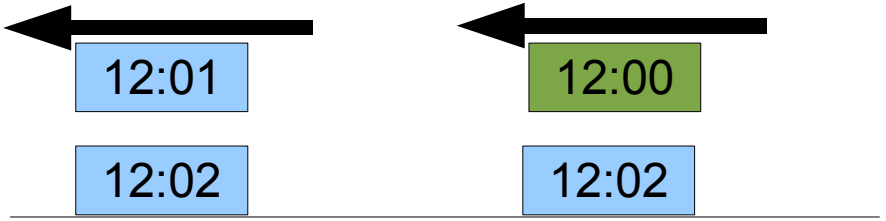


While Bart is passing Anne's friend (AF), one of Bart's friends (BF), whose clock is synch'ed with Bart's, is passing Anne.
What does BF's clock read?

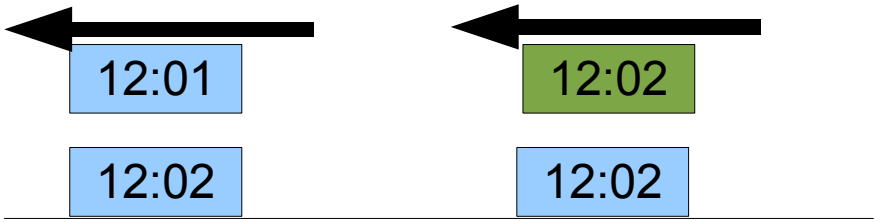
A)



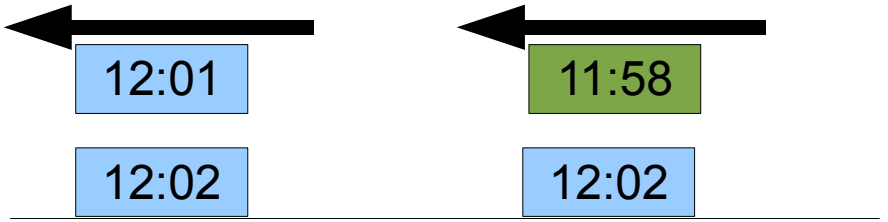
B)



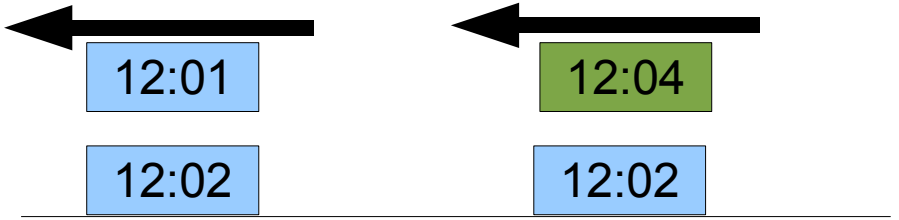
C)



D)



E)



Answer in the next lecture!

Hints: I

Look at this statement about time dilation:
“A single moving clock runs slow when compared against an array of stationary reference clock”

Think about two things: which events are relevant to the question (hint - there are two) AND which is the single moving clock and which is the array of reference clocks.

Maybe you need to think in a different reference frame.