

7. Muons are created in the upper atmosphere of the Earth.
The mean lifetime of these muons in their frame of reference is $2.20\ \mu\text{s}$.
The muons are travelling at $0.99c$ relative to an observer on Earth.
The observer measures the mean lifetime of these muons as

- A $1.56 \times 10^{-2}\ \text{s}$
- B $2.20 \times 10^{-3}\ \text{s}$
- C $1.11 \times 10^{-4}\ \text{s}$
- D $1.56 \times 10^{-5}\ \text{s}$
- E $3.10 \times 10^{-7}\ \text{s}$.