General Physics B (II) # Mini-Test 8 May 10, 2022

Answers without **supporting work** or **necessary unit** will not be given full credit. If the meaning of the question isn't clear, please ask TA! You have **25mins** to complete this mini-test.

Q.1 Reference frame S' moves with velocity $\vec{v} = (\frac{1}{2}c, 0, 0)$ relative to frame S. There's a rocket has velocity $\vec{v'} = (\frac{1}{7}c, 0, 0)$ relative to frame S'. The proper length of rocket is 100 [m]. **(a)** What's the velocity of rocket when you observe in frame S. (5 point) **(b)** What's the length of rocket when you observe in frame S. (5 point)

Q.2 Two clocks A and B are at rest and 100 m apart in frame S. Clock C, at rest in frame S', moves with velocity 0.9 c along the line joining clock A to clock B. According to the observer in frame S', how long and how far does clock C take to get from clock A to clock B? (10 points)